CRANFIELD UNIVERSITY

PAUL VENTON

METHODS OF ENHANCING THE SUSTAINABILITY AND SCALE OF COMMUNITY BASED DISASTER RISK MANAGEMENT

FINDINGS FROM INTERNATIONAL ACTION RESEARCH

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ABSTRACT

Disasters are always local in their impact, and therefore approaches towards their alleviation need to be designed and implemented based on this certainty. So this research is designed to investigate methods of enhancing the development, sustainability and scale of community based disaster risk management (CBDRM). This is undertaken with a special focus upon community risk assessment (CRA) and its relationship with disaster risk reduction (DRR).

Action Research (AR) is the methodological approach adopted to investigate three primary research objectives:

- To investigate the link between community risk assessment (CRA) and community based disaster risk management (CBDRM).
- To identify key issues when addressing the underlying causes of vulnerability within community based disaster risk management (CBDRM).
- To identify challenges in enhancing the sustainability and scale of community based disaster risk management (CBDRM) through stakeholder partnership.

The AR carried out has three main components:

1. The development and testing of a CRA methodology.
2. The identification of good practice CBDRM.
3. Supplementary semi-structured interviews.

Perspectives on the research objectives are collated from a broad array of international experiences, but with the primary location of fieldwork in Bihar, India.

Conclusions to the research demonstrate the importance of linking government policy and practice on DRR with CBDRM, and addressing the underlying causes of vulnerability. While important in their own right, these subjects have also been considered in terms of their inter-connectedness with one another. Indeed they are shown to be mutually reinforcing. However, even more pivotal is the emphasis on their relationship with CRA. Furthermore, contrary to much practice CRA, engaging government officials from the outset and incorporating an investigation into the underlying causes of vulnerability, must not be segregated from action planning but must be fully synchronised with a CBDRM process.

ACKNOWLEDGEMENTS

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I am also indebted to Professor Richard Carter, who kindly agreed to co-supervise my research mid way through. In doing so he has helped ensure that milestones are reached, the approach adopted is as robust as possible, and that submission is on time. It has been a pleasure to receive Richard's advice on research skills combined with very helpful practical guidance.

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My parents and brother have supported and encouraged me throughout my life. They have proven time and again that I can rely upon them. In that sense this thesis is just the most recent, but not the last, endeavour that I have undertaken with their blessing. Thank you.

At the start of this research my wife, Courtenay, and I were engaged and now at the end we are married with two beautiful children. It has been a busy, fun and fulfilling time. Through all the phases of this research Courtenay has been there for me: From start to finish, good times and harder times, in India and at home, whether we are in the UK or the US. As a mother and as an environmental consultant she has made sacrifices to enable me to spend time doing this. But more than that she has been an incredible help, both practically and through her unwavering encouragement. This is a team effort.

This thesis is dedicated to our children, Esmé and Sam, with our love

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LIST OF ACRONYMS

ADPC	Asian Disaster Preparedness Centre
AR	Action Research
BDO	Block Development Officer
BOND	British Overseas NGOs for Development
CBA	Cost Benefit Analysis
CBDP	Community Based Disaster Preparedness
CBDM	Community Based Disaster Management
CBDRM	Community Based Disaster Risk Management
CBO	Community Based Organisation
CDRC/N	Citizens' Disaster Response Centre and Network of NGOs
CRA	Community Risk Assessment
CVA	Capacities and Vulnerabilities Analysis
DFID	Department for International Development (UK)
DiMP	Disaster Mitigation Programme for Sustainable Livelihoods
DMP	Disaster Mitigation and Preparedness
DRMP	Disaster Risk Management Programme
DRR	Disaster Risk Reduction
GP	Gram Panchayat
HFA	Hyogo Framework for Action
HPC	High Powered Committee
ICDPP	Integrated Community Disaster Planning Programme
ICE	Institute of Civil Engineers
IDNDR	UN International Decade of Natural Disaster Reduction
IFRC	International Federation of the Red Cross and Red Crescent
INGO	International Non Governmental Organisation
IPCC	International Panel on Climate Change
IRDP	International Relief / Development Project
LGU	Local Government Unit
MIT	Massachusetts Institute of Technology
NDMA	National Disaster Management Authority
NGO	Non Governmental Organisation
NIDM	National Institute of Disaster Management
ODI	Overseas Development Institute
PADR	Participatory Assessment of Disaster Risk
PRA	Participatory Rural Appraisal
PVA	Participatory Vulnerability Analysis
RRA	Rapid Rural Appraisal
SIDS	Small Island Developing States
UN/ISDR	United Nations/International Strategy for Disaster Reduction
WCDR	World Conference on Disaster Reduction

1 INTRODUCTION

> "*Non-governmental organisation initiated projects have been able to demonstrate effective strategies for disaster risk management in specific locations but the scale of activities is often miniscule in relation to the need.*"[1]

The 'Hyogo Framework for Action 2005 – 2015' (HFA) has led 168 governments to agree to take action to reduce disaster risks. Prior to this, within the 'UN International Decade of Natural Disaster Reduction' (IDNDR) in the 1990s, the 'Yokohama Strategy' was deployed with the same aim. Recently increasing political acceptance of climate change and its causes, combined with its implications regarding the risk of disaster has been more apparent. However, despite international plans of action, high profile declarations and political statements, on a global scale disaster risk reduction (DRR) is currently still losing the battle against the impact of disasters. Evidence is presented in the form of major disasters that have occurred during the research period for this thesis, such as the Indian Ocean tsunami in December 2004, Hurricane Katrina in August 2005, the Pakistan earthquake in October 2005, and numerous floods and droughts affecting millions of people annually. Furthermore, localised events in countless communities, that do not necessarily make media headlines, accumulate to account for significant impacts. In Guatemala, for instance, the scale of such 'adverse local impact events' outstripped official data on disasters by nearly 80 times[2].

However disaster reduction progress is being made. The 'Hyogo Declaration', high-profile disasters, the climate change debate and advocacy on DRR appear to have inspired efforts. Some countries, such as Bangladesh, Cuba, Vietnam and the Philippines, despite their relative lack of resources and exposure to numerous natural hazards, are often cited for making headway in DRR. Part of the reason for this is on account of their respective governments giving the subject priority concern as well as

[1] Dr Marcus Moench, Institute for Social and Environmental Transition (ISET) (see Appendix AJ)
[2] IFRC (2006b, p.23)

the multi-sectoral and multi-level integrated efforts of numerous other stakeholders in the disaster reduction agenda as a component of relief and development programming.

Beneath the surface of any national level achievements, and often despite a lack of them, lies a host of resilient local communities. An approach to DRR that has therefore been gaining increasing attention in recent years is community based disaster risk management (CBDRM). As an approach CBDRM places DRR within the context of the people that are exposed and susceptible to the impact of hazards. It is therefore a strategy capable of ensuring that the subject of DRR is relevant to the lives of those that depend on it, and thus is effective in its application.

CBDRM does, however, have its limitations. Often segregated from wider developmental issues and agendas, devoid of long-term resourcing, invalid where stable communities do not exist and operating on a small scale in isolated locations, CBDRM, regardless of its merits, is in danger of being perceived as irrelevant in comparison with the scale of need. Its limitations are therefore expressed in association with sustainability and scale.

This research has been designed to investigate methods of enhancing the development, sustainability and scale of CBDRM. This is undertaken with a special focus upon community risk assessment (CRA) and its relationship with DRR. This is because to be sustainable CBDRM needs to be based upon a participatory process of risk assessment and analysis: CRA and CBDRM must be synchronised within one process. Due to the dynamic characteristics of risk, this function of assessment within an overall DRR strategy has to be a permanent fixture in a continual cycle of assessment, analysis, planning, action, monitoring and evaluation. Furthermore this process cannot ignore the underlying causes of vulnerability; otherwise actions will only treat symptoms and will thus re-occur. For this type of in-depth comprehensive process to be effective multiple stakeholders are required both from within and outside the affected community. Among these stakeholders, local government is key. Through such outside engagement there is an opportunity to improve not only

sustainability but also the scale of operations too, as CBDRM's influence expands beyond the confines of local community boundaries.

Based upon this paradigm this research has been structured with the following aim and objectives:

Aim

To investigate the relationship between community risk assessment (CRA) and disaster risk reduction (DRR).

Primary Research Objectives

- To investigate the link between community risk assessment (CRA) and community based disaster risk management (CBDRM).
- To identify key issues when addressing the underlying causes of vulnerability within community based disaster risk management (CBDRM).
- To identify challenges in enhancing the sustainability and scale of community based disaster risk management (CBDRM) through stakeholder partnership.

Secondary Research Objectives

- To document the key principles of disaster risk management.
- To identify the critical components of community risk assessment (CRA).

Action Research (AR) is the methodological approach adopted in this thesis to investigate these research objectives. This was undertaken in the context of the researcher simultaneously working as a practitioner for Tearfund, one of the leading UK based non-governmental organisations (NGO) on DRR, and latterly as an independent consultant. The AR carried out has three main components:

1. The development and testing of a CRA methodology – 'Participatory Assessment of Disaster Risk' (PADR)[3].
2. The identification of good practice CBDRM – through a project referred to as 'Turning Practice into Policy'.

[3] Venton and Hansford (2006)

3. Supplementary semi-structured interviews of key individuals – undertaken at times as a Tearfund practitioner / action researcher, and at others as an independent researcher.

Photograph 1.1: Children in Bihar

Source: Courtenay Cabot Venton

Perspectives on the research objectives are collated from a broad array of international experiences - for example through fieldwork in several States of India, plus the Philippines, Indonesia, and Pakistan, and also from attendance at international conferences and workshops and through semi-structured interviews in India, the USA and the Philippines. However the primary location of fieldwork is Bihar in India. This is on account of the fact that:

- Bihar is considered among the most 'hazard-prone' of Indian states and therefore provides a relevant environment for investigating DRR.
- The presence of a strong local NGO as a research partner (Discipleship Centre) facilitated the AR process and allowed an in depth investigation with local communities that would not otherwise have been possible.
- Opportunities existed to work in the same District of Bihar on two occasions.
- Bihar suffers from high levels of poverty, issues of marginalisation for certain groups on account of the demographics of the area, relatively poor accessibility, minimal private sector investment and accusations of government corruption. Thus flooding, and other natural hazards, is set within the context of there being numerous other challenges to development.

- The regularity of severe and damaging flooding provides an opportunity to consider the effectiveness of CBDRM based on its practical application.
- Flooding is set to have wider implications globally on account of climate change, urbanisation and the habitation of floodplains, aiding the likelihood of learning from Bihar having wider implications.

This thesis is structured in the following way:

Chapter 1 Introduction

An outline of the importance of the subject matter, with a description of the research aim and objectives and research methodology adopted

Chapter 2 State of Knowledge

A description of disaster risk management, the components of CRA, and the macro-level context of DRR

Chapter 3 Methodology

A review of the theoretical basis for the research, the progression of research, and the actual methodological approach adopted

Chapter 4 Introduction to Data Collection and Analysis

A description of the data collection and analysis undertaken by the researcher. The chapter explains why the research objectives are important and how they are inter-connected. It also draws on a component of the research itself focused upon the identification of good practice CBDRM.

Chapter 5 Investigating the Link Between Community Risk Assessment and Community Based Disaster Risk Management

A consideration of the research objective: To investigate the link between CRA and CBDRM. The chapter contains sections on data collection and data analysis. The data analysis considers what the obstacles are linking CRA with CBDRM, and then how the obstacles can be addressed.

Chapter 6 Key Issues Addressing the Underlying Causes of Vulnerability Within Community Based Disaster Risk Management

This chapter is based on the research objective: To identify key issues when addressing the underlying causes of vulnerability within CBDRM. It too contains sections on data collection followed by data analysis. The data analysis considers how CRA can incorporate an investigation into the underlying causes of vulnerability, and how the underlying causes of vulnerability can be addressed within CBDRM.

Chapter 7 Challenges in Enhancing the Sustainability and Scale of Community Based Disaster Risk Management Through Stakeholder Partnership

This is the final chapter based on a research objective: To identify challenges in enhancing the sustainability and scale of CBDRM through stakeholder partnership. With a strong government focus, it contains a section on data collection followed by a section on data analysis. The data analysis considers government-related issues that can hinder the allocation of resources for CBDRM, community-related issues that can hinder the flow of information on CBDRM to government, and shared government and community-related issues that can act as a barrier to linking CBDRM with government policy and practice.

Chapter 8 Conclusion

This draws on the preceding data analysis chapters to highlight several key conclusions of the research. These emphasise the mutually reinforcing elements of CBDRM, the fact that CRA can be used to link government stakeholders with methods of addressing the underlying causes of vulnerability, and issues regarding the synchronisation of CRA with CBDRM. The chapter ends with a series of emerging recommendations.

2 STATE OF KNOWLEDGE

2.1 Introduction

This chapter describes the current state of knowledge regarding disaster risk management, in turn highlighting the critical components of CRA. One of these critical components is concerned with the identification of the underlying causes of vulnerability. Another is explained to be the link between CRA and action planning, which forms the basis of CBDRM. However, the effectiveness of CBDRM is constrained not only by local issues of sustainability but also its ability to be scaled-up from a localised process. As such it will be seen that there is an important but rarely documented relationship between CBDRM and government policy and practice. By outlining the current state of knowledge on these issues, this chapter sets the stage for an investigation into methods of enhancing the sustainability and scale of CBDRM through CRA.

This chapter is based on a critical review of existing literature and conference materials, several of which were personally attended by the author. The majority of the material presented here has a global relevance, however where available and relevant specific material that relates to India is cited. The literature, conferences and workshops considered most important to this research are to be found in Appendix A with a brief explanation.

The chapter is structured as follows:

Section 2: Disaster Risk Management. This section provides an overview of the subject describing the components of disaster risk, the evolution of approaches to the management of disaster risk, and principles of disaster risk management.

Section 3: Components of Community Risk Assessment. This section deals with the state of knowledge regarding the core focus of this thesis. It provides a discussion on the inclusion of capacity analysis in CRA, the full participation of local stakeholders in CRA, links between CRA and CBDRM, and the expansion of CRA beyond local community boundaries.

Section 4: The Macro-Level Context of Disaster Risk Reduction. This section provides details on the links between governance and DRR, the 'Hyogo Framework for Action 2005 – 2015', and the Government of India policy and practice on DRR.

2.2 Disaster Risk Management

Disaster risk is commonly defined in terms of three key components: the *hazard* (e.g. a flood), the *vulnerability* to that hazard in terms of exposure and susceptibility to damage and loss, and the *capacity* to anticipate, resist, cope with and recover from a hazard occurrence. These three components are typically described in the following relationship.

$$\text{Disaster Risk} = \frac{\text{Hazard x Vulnerability}}{\text{Capacity}}$$

Each of these components of disaster risk is discussed in greater detail below, followed by a section on 'perceptions of risk'.

2.2.1 Hazard

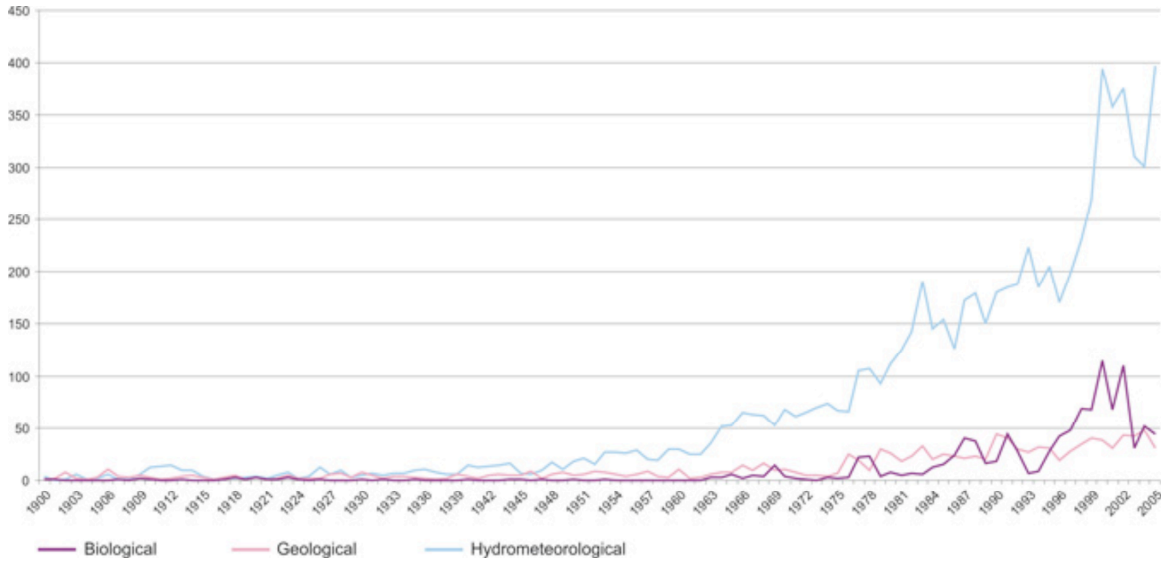
It is not only the media and insurance companies, with caveats referring to *force majeure*, implying a greater natural force or an 'act of God', that tend to over-emphasise the natural hazard component of a 'natural' disaster. The disaster management community itself has been prone to do the same. Ben Wisner, Piers Blaikie, Terry Cannon and Ian Davis pointed this out in the second edition of the 'At Risk' book (Wisner et al., 2004). They draw attention to the fact that the 1990s was the 'UN International Decade of *Natural* Disaster Reduction' (IDNDR)[4]. There are also numerous studies that, upon initial consideration, appear to endorse this point of view by describing disasters in reference to the natural 'trigger' that initiated them (for example, Alexander, 1993; Parker, 2000).

[4] One of the key messages stemming from the IDNDR was that good practice DRR must take account of multiple hazards. Despite most emphasis in this thesis on hydro meteorological hazards it is therefore important to note that other natural hazards, such as of geological origin (for example volcanoes, earthquakes and subsequent tsunamis), are also relevant to this research. Indeed non-natural hazards may also be important from others' perspectives in terms of the prioritisation of hazards and other 'shocks'.

This, of course, is mainly a simple means of classification. However, by appearing to focus attention on the hazard alone, the complex interaction of these hazards with different aspects of society can be, and has been, overlooked. This section therefore focuses upon the natural hazard itself, while the subsequent sections investigate the relationship between a hazard and the formation of a disaster.

This thesis focuses most attention on hydro meteorological hazards[5]. This is because these natural hazards are the most common globally (UN/ISDR, 2005), and are increasing in frequency and severity in many regions (see Figure 2.1). They are also having an increasing impact upon India (see Chapter 2.4.4) and more specifically the primary fieldwork location of Bihar (see Appendix B).

Figure 2.1: Number of Natural Disasters, 1900 - 2005

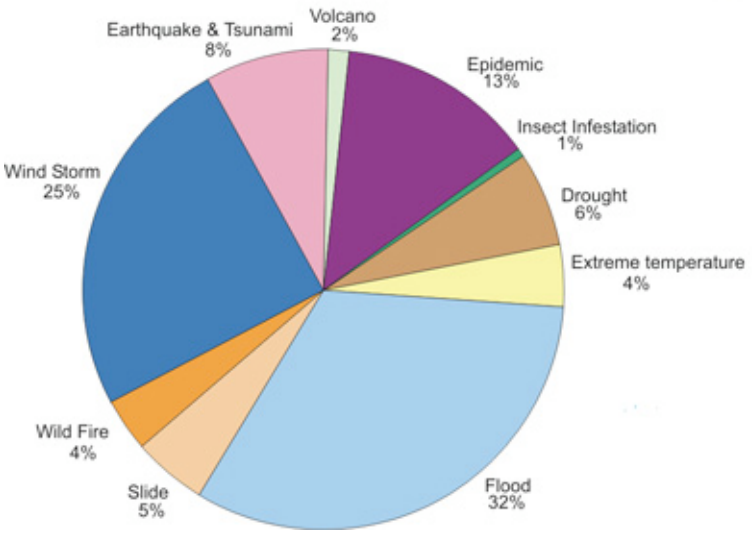


Source: EM-DAT: The OFDA/CRED International Disaster Database
http://www.em-dat.net, UCL - Brussels, Belgium

[5] Defined by the United Nations / International Strategy for Disaster Reduction (UN/ISDR) as "Natural processes or phenomena of atmospheric, hydrological or oceanographic nature." Examples of hydro meteorological hazards include: Floods (which can carry debris and mud as well as water); Tropical cyclones and severe wind storms (with their derivatives of storm surge, heavy rainfall, hail or snow); Drought, with implications regarding desertification, fire, temperature extremes, sand or dust storms; Permafrost and snow or ice avalanches (Adapted from UN/ISDR terminology http://www.unisdr.org/eng/library/lib-terminology-eng%20home.htm).

Among hydro meteorological hazards, and natural hazards in general, floods are the most common (see Figure 2.2).

Figure 2.2: World Distribution of Disasters by Type 1991 - 2005



Source: EM-DAT: The OFDA/CRED International Disaster Database
http://www.em-dat.net, UCL - Brussels, Belgium

A number of factors have important bearing upon hydro meteorological hazards. The most commonly cited include climate and land use changes[6], and so a brief description of the key issues associated with these factors that pertain to hazard occurrence and disaster risk are described below.

Climate change

Climate change is a significant factor that is influencing the frequency and severity of hydro meteorological hazards, including flooding. Current estimates of the predicted impacts of climate change vary, with assessments of future global temperatures differing between 1.4 and 5.8 degrees Celsius. However, despite this variance, even the minimum predicted shifts in climate for the 21st century are likely to be significant and disruptive. For instance, an increase in 2 degrees Celsius has been declared as 'dangerous' by the

[6] Including deforestation and issues associated with urbanisation and population growth

EU, while changes at the higher end of the spectrum could be catastrophic (WaterAid, 2007[7]).

The 'Intergovernmental Panel on Climate Change' (IPCC) has projected that flooding and landslides pose the most widespread direct risk to human settlements from climate change (Aalst, 2006; IIED and NEF, 2004, p.18). In part this is due to:

- More frequent wet spells in middle / high latitude winters.
- More intense mid-latitude storms.
- Increased frequency of extreme precipitation events.
- Increased magnitudes of precipitation events of high intensity.

Focusing on India, recent work on climate change has indicated that the impacts of the climate on hydro meteorological events could intensify the hydrological cycle resulting in increases in extreme rainfall and rainfall intensity as well as increased drought. More specifically, the mean intensity and variability of the Indian monsoon is expected to increase (Ashrit et al., 2001; Chung et al., 2006; Kumar et al., 2006; Douville, 2006). Moreover, on account of the melting Himalayan glaciers, the Government of India (2002, p.39) believes that, "in the next 50 to 60 years [the loss of water availability downstream will] adversely affect agricultural economies such as the plains of Uttar Pradesh and Bihar". Mall et al. (2006) researched climate change impacts within the context of human vulnerability and found Bihar (and five other States) to have the lowest adaptive capacity in India.

Appendix C provides further details on climate change with two sections. The first describes the growth in the political acceptance of climate change and its causes, and the second describes more findings on climate change in India.

[7] Thesis author as co-author on this 'Briefing Paper' for WaterAid (2007) on climate change and its impacts on the hydrological cycle and the poor, plus mitigation and adaptation strategies.

Land use

The increasing risks associated with flooding and landslides (and other natural hazards) are also due to land use changes (Aalst, 2006; IIED and NEF, 2004 p.18). For example, pressure on natural resources due to increasing populations can lead to deforestation, which is associated with unstable slopes. Urbanisation can also have negative consequences in terms of disaster risk, as decreased areas of soil reduces the capacity of the land to absorb flood runoff (UNDP, 2004).

Appendix D provides details on the links between land use, population growth, natural resource depletion and disaster risk with a focus on India (and northern Indian rivers' 'upstream' connection with Nepal).

2.2.2 Vulnerability

Al Gore's film named 'An Inconvenient Truth' (United International Pictures, 2006) indicates the difficulties and dilemmas associated with convincing individuals, organisations and nations that they are responsible for causing the climate to change. This title could equally apply to the wider disaster reduction agenda as it struggles to expand 'disaster occurrence' to mean more than severe 'natural hazard occurrence' by encompassing issues of vulnerability, particularly social vulnerability.

The United Nations International Strategy for Disaster Reduction (UN/ISDR) defines vulnerability as "the conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards". However, vulnerability can be interpreted in many ways: "Often the term vulnerability is used loosely to mean many different things, and applied to people, structures, infrastructure, networks, etc. But all of these many facets of vulnerability and risk are integral to the vulnerability of people" (Wisner et al. 2004,

pp.55-56[8]). For example, while structures may be 'unsafe', it is ultimately the people who rely on those structures who are 'vulnerable' (see Box 2.1).

Box 2.1: The Use of the Term 'Vulnerability'

This issue was raised during a debate at the 'Social Vulnerability and Capacity Analysis Workshop' initiated by Stephen Bender[9] in Geneva, May 2004. The example was given of a bridge providing a vital link between a village and a market place. On account of its function as a significant factor in the security of people's livelihoods it consequently influenced their level of resilience or vulnerability. If the bridge were to collapse, due to an earthquake say, then there could be dire consequences for the village due to a lack of access to the market and for other reasons. The ability of the bridge to withstand earthquakes is therefore given a measure of significance because of the important function it performs for the inhabitants of the village, perhaps as well as on a more macro scale. So the bridge may be 'weak' which has implications in terms of 'vulnerability' for those that depend on it.

For clarity, this thesis uses the definition of vulnerability that registers *people* at the centre of all investigations, and is thus in alignment with Cannon (2003), Wisner et al. (2004) and the views of Stephen Bender as expressed in Geneva. However, it is acknowledged that the term 'vulnerability' for years has legitimately been, and will continue to be, used widely by professionals in other disciplines and by the general public to mean different things and to be applied to situations, buildings, places etc., as well as people.

Exposure and susceptibility

As encompassed in the UN/ISDR definition, vulnerability means more than 'exposure' to shocks and hazards (Winchester, 2000). While this spatial and temporal element is important, vulnerability also has dimensions of a different nature: 'susceptibility'. This is a measure of how well an individual, household or community is able to withstand the impact of a shock. An appreciation of this concept helps to prevent confining vulnerability to being a purely physical condition; living on a flood plain for instance or

[8] However, according to personal communication in 2007, this is not the opinion of Professor Ian Davis who co-authored the book.
[9] Organisation of American States (OAS)

on a steep unstable slope. In precise opposition to the current state of knowledge, the Government of India, in their report to the 'World Conference on Disaster Reduction' (WCDR)[10], said "Natural disasters…have no social or economic considerations" (Government of India, 2005a, p.63, para 6)[11]. Contrary to this statement however, physical, social, economic and environmental factors will all influence levels of susceptibility, and indeed generate conditions that force people into inhabiting or working in areas of high exposure to hazard risks. On this issue James Lewis astutely noted twenty years ago that, "All disasters are slow onset when realistically and locally related to conditions of susceptibility" (Lewis, 1988). In essence he was implying there is no such thing as a rapid-onset disaster[12], as the conditions required that generate vulnerability can be deep-seated and entrenched over very many years before a disaster is actually triggered by a hazard of some description.

With strengthening agreement on this perspective of vulnerability there is now an important link being made between disasters and development (UNDP, 2004). Disasters undermine development (see Chapter 2.3.5), and development can ignore or even generate disaster risk. Further, Yamin et al. (2005) suggest that, "today's poverty is yesterday's unaddressed vulnerability."

When vulnerability is applied to people, assumptions are often made regarding who is most vulnerable[13]. Generalisations of this nature are often applied to social groups commonly listed as: women, the elderly, young children and the disabled, in Mary Anderson's words "as if all women and children are the same." The pre-defining of vulnerable groups by National Societies ahead of carrying out open-minded participatory

[10] Held in Kobe, Japan, 18 – 22 January 2005
[11] The Government of India do in other parts of their report to the WCDR acknowledge the role that vulnerability to natural hazards has. This implies that greater effort is required to ensure consistency in messages and understanding among government officials, particularly those engaged in a critically important international disaster reduction conference.
[12] Personal communication with Terry Cannon and subsequent email correspondence between him and James Lewis on this issue to verify the statement, May 2007
[13] Personal communication during meeting with Mary Anderson in Cambridge, Massachusetts, 27 June 2006

investigations was a finding of the International Federation of the Red Cross and Red Crescent (IFRC, 2006).

The Crunch Model

The deep-rooted role that vulnerability plays in the formation of a disaster, due to both exposure and susceptibility, is captured within the 'Pressure and Release' (PAR) model, more commonly known as the 'Crunch Model'. This model was first introduced by Professor Ian Davis in 'Shelter after Disaster' in 1978 but was further refined in the first edition of the book 'At Risk: Natural Hazards, People's Vulnerability, and Disasters' (Blaikie[14] et al., 1994) and the book's second edition (Wisner et al., 2004). The 'At Risk' books led to the models' widespread recognition and acceptance, particularly as a "descriptive representation", rather than as an "assessment tool" (Davis et al., 2004)[15].

This happened despite concerns regarding the effectiveness of DRR models. Professor David Alexander (1999) noted that, "Models and interpretations of disaster abound, but the phenomenon is so multi-faceted that a general theory of universal explanatory power is unlikely ever to be formulated". Alexander's note of caution is reiterated and expanded in the opening paragraph of 'Mapping Vulnerability' (Bankoff, 2004), which highlights the paradox of "reconciling local experiences with global considerations" with the words, "The nature of this complexity dictates that there can be no general theory and therefore no simple solutions."

However, the 'Crunch Model' does respond to these challenges. As well as effectively illustrating how it is a combination of both hazard and vulnerability that defines the boundaries of disaster risk, it also draws attention to the important concept of their being 'levels' in the generation of risk, as noted in the above reference (Bankoff, 2004) and the earlier quote by James Lewis (1988). It explains how people live in 'unsafe conditions'

[14] As for the second edition, the author's are Piers Blaikie, Terry Cannon, Ian Davis and Ben Wisner
[15] This is significant on account of the 'Crunch Model's use as the basis of a CRA methodology developed and tested as a component of this research (see Chapter 3).

due to ‘dynamic pressures’ exerted upon their circumstances by the ‘root causes’ of vulnerability itself. This is termed the ‘progression of vulnerability’ (Wisner et al., 2004).

Figure 2.3: The ‘Pressure and Release’ (PAR) Model - Otherwise Known as the ‘Crunch Model’

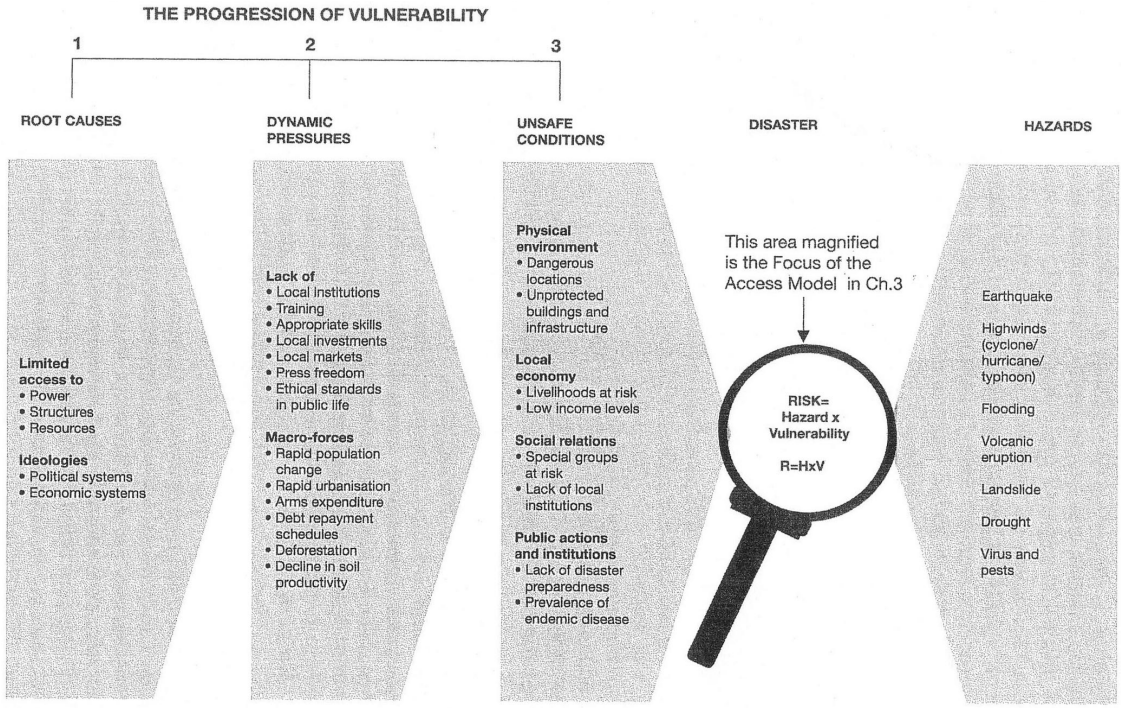


Figure 2.1 Pressure and Release (PAR) model: the progression of vulnerability

Source: Wisner et al. (2004, p.51)

A similar conceptual theory that helps us appreciate how the ‘big picture’ dictates realities at grass-roots level has been proposed by Terry Cannon (in Parker, 2000; Cannon 2003; Cannon et al., 2003). Cannon explains how the issues of vulnerability and risk, experienced locally, can be traced from the immediate assets and livelihood base of a household along a ‘chain of causation’ back to the processes and institutions that determine the distribution of safety and vulnerability in society. Appendix E describes this model in more detail.

2.2.3 Capacity

'Capacities', 'local resources', 'coping strategies', 'coping mechanisms' and 'resilience' are all used to describe a set of conditions that in essence offer an antithesis to social vulnerability. In the last two decades it is 'resilience' that has become the 'buzz' word to describe the capacity to survive, resist hazard forces, adapt and bounce back from disasters[16]. Without being impeded by the ever-evolving preferred terminology within the disaster management community, capacities are now recognised as being of fundamental importance to the reduction of disaster risk. Indeed the idea has been enshrined in the 'Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief' for over a decade (IFRC, 2004, p.9). At the 'International Workshop on Community Risk Assessment'[17], Dr Ben Wisner went so far as to say that, "Vulnerability is meaningless without an understanding of its converse, capacity" (DiMP, 2005, p.7).

Zenaida Delica-Willison[18] suggests that a resilient household or community has some similar characteristics to that of bamboo. A bamboo plant is able to withstand the impact of a hazard (strong winds for example), absorbing its energy through its flexibility, and recovering quickly with little or no long-term damage. Expanding on this visualisation, the essence of what a resilient community looks like in practice is captured by considering the set of indicators regarding a minimum level of resilience as discussed at the Asian Disaster Preparedness Centre's (ADPC) 'Regional Workshop on Critical Guidelines of Community Based Disaster Risk Management' (ADPC, 2006)[19]. According to this group, indicators of a resilient community include:

- A community organisation.
- A DRR and disaster preparedness plan.

[16] For instance, the 'World Disasters Report' for 2004 (IFRC, 2004) was sub-headed 'Focus on Community *Resilience*', the first publication of the newly formed 'Global Network of NGOs' for disaster risk reduction is on the subject 'Building Disaster *Resilient* Communities' (UN/ISDR and UNDP, 2007) and perhaps most significantly the 'Hyogo Framework for Action 2005-2015' (UN/ISDR, 2005) is sub-headed 'Building the *Resilience* of Nations and Communities to Disasters'.
[17] Cape Town, South Africa, 31 May – 2 June 2005
[18] South-South Disaster Risk Reduction Advisor, UNDP Thailand
[19] Bangkok, 24 - 27 January 2006

- A community early warning system.
- Trained groups for risk assessment, search and rescue, medical first aid, relief distribution, masons for safer house construction, fire fighting, etc.
- Physical connectivity through roads, electricity, telephones, etc.
- Relational connectivity with local authorities, NGOs, etc.
- Knowledge of risks and risk reduction actions.
- A community disaster reduction fund to implement risk reduction activities.
- Safer houses to withstand local hazards.
- Safe source/s of livelihoods.

  (ADPC, 2006, p.25)

Reflections on resilience are not limited to local levels and communities, but are also applied freely to anything from ecosystems to business, and at any level from households to countries and global communities (IFRC, 2004, p.11), as demonstrated by the examples in Footnote 16.

Often it is assumed that the objective of being resilient is 'survival in the face of adverse events'. While this is common, it masks other important purposes. In the face of a threat it is understood that people will actually have a wider perspective and attempt to adapt so as to preserve needs as high up Maslow's 'Hierarchy of Needs' as possible[20] (Wisner, 2004, pp.113-114). In this sense importance is placed on day-to-day conditions, not exceptional events, and people's desires and aspirations. Putting it another way, livelihood strategies and their protection becomes a significant focus of coping (Allen, 2004, p.112). This is commonly overlooked. Supporting resilience means more than delivering relief or mitigating individual hazards (ADPC, 2006, p.23). It requires as systematic and comprehensive an analysis as that applied to the understanding of needs, vulnerabilities or risks.

[20] Abraham Maslow's 'Hierarchy of Needs' is a theory in psychology that was proposed in his 1943 paper 'A Theory of Human Motivation'. Maslow proposed that as humans meet 'basic needs' they successively seek 'higher needs' (see Appendix F)

And yet practical progress by the disaster management community in this area has, according to IFRC (2004, p.16), not really improved since the first wave of livelihoods research in the 1970s and 1980s. For instance evaluations of post-disaster activities by the international community commonly emphasise the lack of attention afforded to people's strengths and abilities. This is despite the fact that local people and community-based organisations (CBOs) generally cope with immediate problems and save lives before the arrival of international actors. For example, according to the Tsunami Evaluation Coalition, "local ownership of the tsunami response was undermined and some local capacities were rendered more vulnerable by the [international community] response to the disaster" (Scheper, B. et al., 2006). Consequently one of the key findings of this evaluation is that there is a need to rethink the end goal of humanitarian assistance and move from a service delivery approach to a capacity empowering framework. This process is based on participation, consultation and information sharing.

2.2.4 Perceptions of risk

The interaction between hazards, vulnerabilities and capacities generates a condition of risk. But this risk is not definitive, set or easily quantifiable. Essentially, risk is subjective. The Oxford English Dictionary[21] describes risk as relating to "a situation involving exposure to danger". But what is dangerous, when is it dangerous, and who is it dangerous to, etc. varies from person to person, community to community and is always dependent on context.

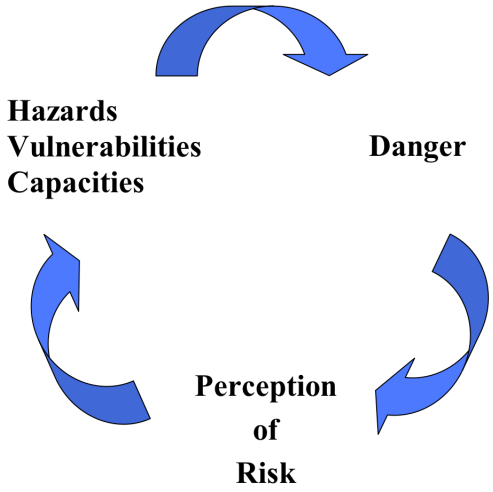
The way in which individuals, communities and society as a whole perceive risk can have significant influence over how risk is later experienced[22].

[21] http://www.oed.com

[22] To illustrate this, an experienced ocean-going yachtsmen and a novice sailor may be exposed to the same storm threat, but their perception of the risk may well differ. This perception will influence their actions, which will in turn influence the way in which the storm affects them. The experienced yachtsmen may appreciate the significance of the meteorological data he is receiving and based on skill and experience make appropriate preparations. The novice sailor could, conceivably, under-estimate the scale of the danger, not make the best decisions and consequently compromise the safety of the boat and crew. Conversely the experienced yachtsmen may be complacent or distracted by other matters, compromising

Figure 2.4: Risk Perception Loop

Hazards, vulnerabilities and capacities generate a condition of danger. Different people perceive this danger in unique ways and if they are in different contexts. In turn this influences susceptibility to the hazard. But then as susceptibility to the hazard alters so does the level of danger, and thus the loop begins again.



Ironically, a low perception of risk due to a greater sense of security for people protected from the 'ravages of nature' by structural defences can contribute to the makings of a disaster through complacency and lack of community preparedness. The same applies through local residents' misunderstanding of technical terms, such as locating above the flood heights associated with formal standards such as a '1-in-100' year flood (Godber, 2005). This type of misunderstanding or complacency was evident in New Orleans, where a survey of 4,800 residents of South-Eastern Louisiana concluded that "the most remarkable finding [was] the low perception of risk" among many citizens ahead of Hurricane Katrina in August 2005[23] (Howell, S. and Bonner, D., 2005). In making an evacuation decision people were seen to rely on public officials, family and friends, past experiences but, most importantly, perceptions of their own risk (as influenced by the others). Similar findings have emerged from research in the Netherlands (ICE, 2001) and Australia (Pfister, 2002). Less developed countries experience this irony too, but perhaps

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his perception of the risk, leading to catastrophe. Meanwhile, the novice may be extra cautious and methodical in preparing the vessel for the storm and consequently fare much better.

[23] The flood protection system in New Orleans failed in 53 different places. Nearly every levee in metro New Orleans breached as Hurricane Katrina passed east of the city, subsequently flooding 80% of the city and many areas of neighbouring parishes for weeks. Hurricane Katrina resulted in at least 1,836 people losing their lives (http://en.wikipedia.org/wiki/Hurricane_Katrina).

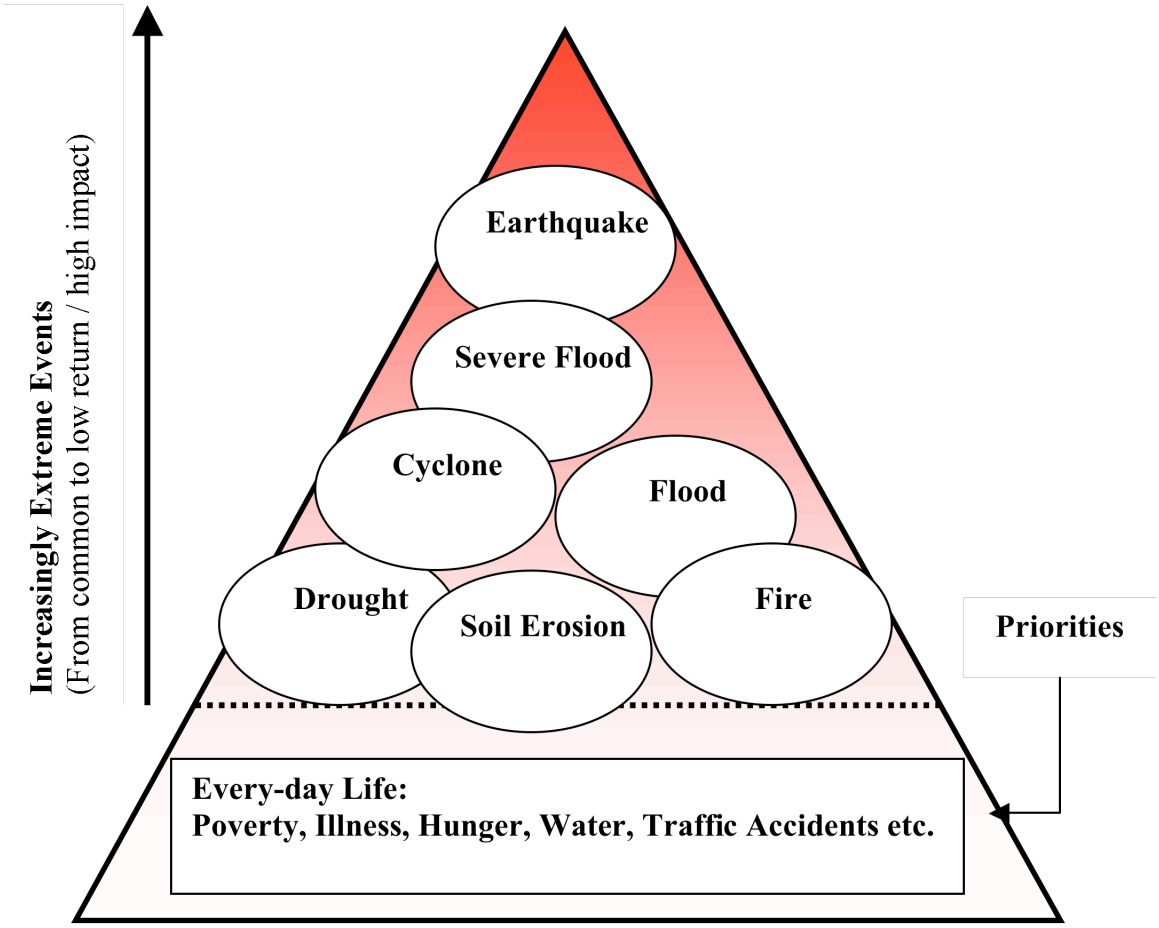
compounded with a larger number of other factors besides a faith in the ability of a structural defence to provide adequate protection. In India for example, despite decades of investment in river embankments, losses remain high (DFID, 2005, p.30) (see Box 2.2).

The risk of disaster is most obvious after the event, although the conditions of risk (hazards, vulnerabilities and capacities) were present beforehand. However ahead of a disaster it is normal for local people to place greater emphasis on other risks, particularly those that directly threaten their most basic needs (IFRC, 2006a), i.e. the bottom stage of Maslow's 'Hierarchy of Needs' relating to their physiological needs (such as food, drink and shelter). So although an earthquake, for example, is a hazard highly likely to result in death and injury if it occurs[24], risks to today's livelihood earnings and health status are normally considered more important and pressing (Buckle et al., 2003[25]). This is illustrated in Figure 2.5.

[24] Earthquakes and tsunamis accounted for 63% of all deaths of people killed by natural disasters in developing countries between 1991 and 2005 (EM-DAT: The OFDA/CRED International Disaster Database. http://www.em-dat.net, UCL - Brussels, Belgium)

[25] The team of researchers talked with local people across Victoria in Australia and found that, "Risks associated with hazards such as fire and flood were demonstrably of less significance than threats associated with the practicalities of navigating a course through daily life" (p.83)

Figure 2.5: Hierarchy of Local Citizen Risk Perception



Source: Adapted from presentation made by Terry Cannon at British Overseas NGOs for Development (BOND) DRR Group in London on 9 February 2007[26]

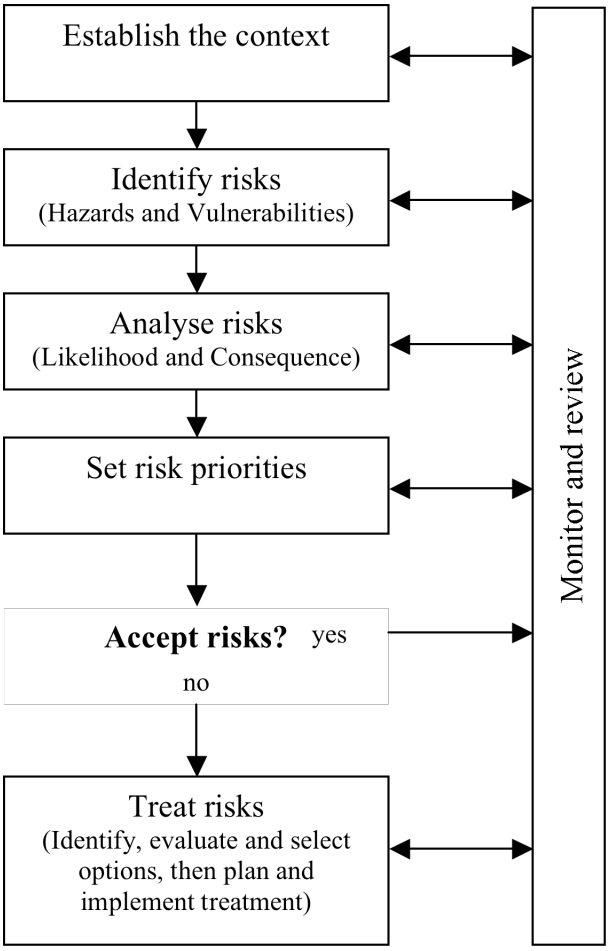
Acceptable risk

Risks are ubiquitous, varied and changeable. It is not possible to remove all risks, but it is feasible that risks can be identified, analysed, prioritised and reduced accordingly, depending upon available resources and the will to do so (see Figure 2.6)[27].

[26] Attended by author

[27] Taking an historic viewpoint of the word 'risk' and its derivations is of interest on account of the fact that it is associated with voluntary control and manageability (e.g. the phrase 'to take a risk'). This contrasts with the word 'hazard' which is associated with involuntariness, chance and divine influence (Barnes, 2002, p.16).

Figure 2.6: Establishing Acceptable Levels of Risk



Source: Adapted from Pisaniello, J. et al. (2002) 'The Emergency Risk Management Process'

But what level of risk is acceptable? As we have seen by considering perceptions of risk likewise, "The judgement that a given risk is acceptable" according to Andrew Coburn, "is not something that depends on actual risk level, so much as a subjective determination, using various value judgements"[28]. It is suggested by Graham Betts-Symonds[29] that these judgements are influenced by six inter-connected contexts or

[28] Andrew Coburn, (Risk Management Solutions) 1993 – as quoted in a presentation by Professor Ian Davis "Principles of Risk Assessment" at Cranfield University

[29] From Graham Betts-Symonds' (IFRC) adaptation of a model by Robert Dilts (Epstein, 1991) as illustrated in IFRC (2006a)

viewpoints: an individual's or community's capability, beliefs and values, goals, identity, behaviours and environment (place) (IFRC, 2006a and IFRC, 2007).

A conclusion that emerges from research by Buckle et al. (2003) showed that agencies, mandated by legislation, government policy, political expediency, and agency tradition, had a different view of hazards and risks to local people and to local communities. Others have also remarked on differences in opinion, particularly between the general public and 'officials' (Barnes, 2002; Handmer, 2000; Pisaniello et al., 2002). The IFRC (2006a) have observed that "the priorities of the people often do not match those of the outsider", and so in this sense even someone attempting to see a situation through the eyes of a local community member or group (such as a National Society volunteer, or an NGO practitioner) can unintentionally demonstrate the same tendencies as 'officials'.

Conversely even agreement on acceptable levels of risk may derive from different perspectives and priorities[30].

Once an acceptable level of risk is agreed upon by relevant stakeholders in a risk assessment process combined with realistic expectations of feasibility of any proposed mitigation measures, then available resources may be channelled to achieve this aim.

[30] This can be demonstrated by comparing coastal communities in the USA and Bangladesh. Wealthy coastal communities in Florida may accept exposure to the risk of hurricanes and flooding so as to enjoy pleasant sea views, direct access to a private beach and a warm climate. The assumption is that the risk is acceptable because it is bolstered by such factors as satisfaction in building quality, insurance policies and faith in the emergency services. Poor coastal communities on charlands in Bangladesh accept exposure to the risk of cyclones and flooding so as to be close to the sea or fertile delta farmland to sustain their fragile livelihoods. The assumption is that the risk is acceptable *despite* poor building quality, a lack of insurance or robust emergency services because there are no feasible alternatives. Both examples of exposure to risk are based on highly subjective judgements.

2.2.5 The evolution of disaster risk management

The management of disaster risk has evolved over the years. In particular, two distinct perspectives on disaster have been identified in the last twenty years; the 'dominant' and the 'political economy' (or community-based) approach. Although the community-based approach is the most recent, in many circumstances the dominant approach is still a commonly held view.

The dominant approach

The 'dominant approach' to disaster mitigation, as termed by Maskrey (1989), focuses on the hazard as the prime cause of a disaster and hence places it at the epicentre of remedial action. Approaches to disaster risk management based on this understanding thus tend to focus on engineering solutions, such as flood defences, and technical measures in an endeavour to 'control nature'. Also a dominant top-down approach could recommend moving people to peripheral 'safer' locations to escape seismic risk for example. Or it may recommend increasing rent to pay for safety features retrofitted to people's homes.

The historical precedent for focusing on the management of the natural hazard in this way is strong. Engineered flood defences, for example, are "as old as the history of urban civilisation" (Jones, 2000 p.113; ICE, 2001). In fact, as a result, there are few natural rivers left in the developed world (Jones, 2000, p.124). Even the response to the recent Indian Ocean tsunami (26th December 2004) was dominated by the development of an expensive early warning system based on high-tech measures; detectors transmitting information from the seabed to floating buoys then via satellite to a control centre. The scale of the disaster also prompted the UK government to invite the Chief Scientist to convene a 'Natural Hazard Working Group' to not only advise the G8 summit in Gleneagles on detecting tsunamis, floods and cyclones but also "global physical natural hazards" (DTI, 2005). These include collisions with "near earth objects" (comets and asteroids).

However, the 'dominant approach' has many shortcomings and numerous studies have thus criticised the structural 'top-down' bias of solutions to deal with disasters as hazard problems, particularly in developing countries (Maskrey, 1989; Tobin, 1996; Fordham, 2000, p.66; Handmer, 2000, p.281; Jain, 2000, p.257). Providing an overall summary of such criticisms, Maskrey (1989) draws attention to the dangers of this approach by suggesting that they invite initiatives that may go so far in their miscalculation of the context and true causes of disasters as to create conditions for renewed or even increased risk to future disasters. Some examples are provided below.

Relocation as a disaster risk reduction strategy

Solutions deemed to be mitigating disaster by relocating communities could simply aggravate existing vulnerabilities, or create new ones by exposing people "to permanent social and economic disaster, worse than the [natural] disaster from which they might escape" (Maskrey, 1989, p.42). In support of this perspective, relocation as a DRR strategy is documented as a failure in Vietnam's flood relocation programme (MARD, 2003; Adam Fforde and Associates, 2003), appeared unpopular amongst the residents of the devastated community of Infanta in the Philippines following the mud and debris filled floods of December 2004[31] and is a highly charged issue for citizens of Balakot in Pakistan[32] following the October 2005 earthquake.

Flood control

Often stemming from the dominant approach paradigm, there is evidence that the philosophy of widespread dyke building is counter-productive by allowing activities onto the floodplain that would otherwise not occur (Tobin, 1996; Jones, 2000, pp.124-125). Further, there can be far reaching consequences of such actions beyond the local context. As an example, the 'Bangladesh Flood Action Plan', which instituted a range of hard

[31] Based on personal observations during fieldwork

[32] Based on personal observations during fieldwork. Balakot was designated a 'red zone' by the Government of Pakistan on account of its unsafe location in this seismically active valley (threatened by landslides and flooding). The reason that the relocation plans have only affected some citizens is because the plans were slow in their formation, and in the meantime people rebuilt their homes and businesses in the original town location.

engineering measures such as the building of embankments, was "widely criticised for…increasing flood risk for people in downstream areas" (Rasid, 2000, p.4 and p.46; DFID, 2005, p.29) as well as between embankments. Box 2.2 describes how the use of embankments as an engineering solution to flooding in India has in fact increased disaster risk[33].

Box 2.2: Flood Embankments in India

"Measures for flood mitigation were taken from 1950 onwards. As against the total of 40 million hectares prone to floods, [an] area of about 15 million hectares has been protected by construction of embankments. A number of dams and barrages have been constructed. The State Governments have been assisted to take up mitigation programmes like construction of raised platforms etc. Floods continue to be a menace however mainly because of the huge quantum of silt being carried by the rivers emanating from the Himalayas. This silt has raised the bed level in many rivers to above the level of the countryside. Embankments have also given rise to problems of drainage with heavy rainfall leading to water logging in areas outside the embankment."

Source: Government of India (2005a)

As a specific example, in Bihar the area of the State that is prone to flooding has increased from 2.5 million hectares in 1952 to 6.9 million hectares in 1994 on account of the building of embankments[34].

Hi-tech early warning

In comparison to the flurry of technologically-based hazard awareness in the aftermath of the Indian Ocean tsunami, work devoted to methods of ensuring that hi-tech warnings are effectively disseminated to populations exposed to the threat in time to take appropriate actions, and the development of effective evacuation plans, have been given totally insufficient impetus and attention (Clinton, 2006a and 2006b)[35]. In the words of Dr

[33] These perspectives were included in the Government of India's report to the WCDR held in Kobe, Japan, 18 – 22 January 2005 (Government of India, 2005a)

[34] Dinesh Kumar Mishra (http://www.himalmag.com/2007/august/bihar_flood_dinesh_mishra.htm)

[35] The four elements of a 'people-centred early warning' system are risk knowledge, monitoring and warning, dissemination and communication, and response capability (Source: UN/ISDR Platform for the Promotion of Early Warning, http://www.unisdr.org/ppew)

Charles McCreery[36] at the WCDR[37], "Warnings are pointless if they do not reach the right people in time." Not surprisingly then, a "people-centred" early warning system is one of the eleven "Lessons for a Safer Future" coming out of the Indian Ocean tsunami experience (UN/ISDR, 2006).

Despite such documented shortcomings of the 'dominant approach' to disaster risk management, it is still commonly deployed. This is concerning. Wisner et al. (2004, p.270), referring to research undertaken by Peter Winchester in Andhra Pradesh on cyclones and flooding, emphasises his conclusions and explains the concern by saying that, "As long as technical experts perceive the solution to vulnerability in terms of technical adjustments…then solutions will only treat symptoms and not causes." Thus risks remain. What is more, this technical consideration to deal with disasters as if they are solely caused by natural hazards appears politically attractive. It is hard to imagine why else, for example, India's opening sentence in its report to the WCDR states, "India has been traditionally vulnerable to natural disasters on account of its unique geo-climatic conditions" (Government of India, 2005a). This style of 'politically acceptable' statement was alluded to by Kofi Annan[38] when he closed the IDNDR in 1999 with the words, "We know what has to be done, what is now required is the political commitment to do it".

A final note on this subject should be included to highlight that infrastructure and other physical forms of development are, other than in a small number of cases, not likely to be based on a 'dominant approach' to disaster mitigation or any other approach to the subject of DRR. This over-prioritises the current influence of disasters in development planning. For example, in India the 'High Powered Committee on Disaster Management' state, "Ad hoc land-use decisions are a common practice in our system due to immense demand pressures on a scarce urban land supply" (Government of India, 2002, p.43). Non-disaster risk aware development may have more implications on disaster

[36] Director, Pacific Tsunami Warning Centre
[37] Personal attendance by author at Dr McCreery's presentation in Kobe, Japan, 18 – 22 January 2005
[38] Former UN Secretary General (1997-2007)

characteristics than purposefully designed dominant approaches to tackle this specific problem.

Emerging perspectives

On a more positive note, as a result of the drawbacks and shortcomings of the 'dominant approach' there was a shift in the 1990s by engineers at the forefront of the subject away from the promotion of 'hard' engineering structures to 'soft' measures working with natural morphological and ecological characteristics (Winchester, 2000)[39].

In support of this paradigm Professor Edmund Penning-Rowsell[40] has suggested that the term 'hazard', with its negative connotations of 'danger', may advisably be replaced by the word 'process' or 'natural phenomena' as this would better indicate the normality of the natural events and the potential benefits that certain 'hazards' can bring (Handmer, 2000, p.276; Rasid, 2000, p.61). For example: floods can bring fertile silt and essential irrigation to drought prone land; volcanic eruptions yield highly fertile soils; hurricanes are a vital form of moisture redistribution in tropical areas; and forest fires triggered by lightning strikes are an essential element in forest eco-systems[41].

So a transition away from the 'dominant approach', with its attempts at top-down structural mitigation that focuses on the hazard, is underway (Buckle et al., 2003). But it remains quite weak.

[39] For instance, the Government of Japan is shifting from flood protection based on concrete river walls to construction based on ecosystem restoration. In Sri Lanka, the Disaster Management Centre has studied the potential benefits of adopting hybrid schemes or 'soft engineering' approaches to coastal defence. And in the US, community members in California, having rejected several environmentally insensitive flood plans, opted for an innovative combination of bank terracing, parkland bypass channels, and restoration of downstream tidal wetlands (UNEP and UN/ISDR, undated, p.26).

[40] Co-founder of the Flood Hazard Research Centre at Middlesex University. Personal communication with Professor Ian Davis (2005), who prior had personal communication with Penning-Rowsell on this subject.

[41] Personal communication with Professor Ian Davis (2006)

The community-based approach

Several decades ago, Gilbert F. White (1945) wrote in an insightful paper for the University of Chicago that, "Floods are acts of God, but flood losses are largely acts of man". Despite this clear analysis of disaster, applied here to flood-plain management, it is felt by Wisner et al. (2004) that the 'naturalness' of 'natural disasters' was not properly questioned until the 1970s (by O'Keefe, Westgate and Wisner, 1976). However, notion of the social, political and economic influences upon disaster occurrence being taken seriously in disaster risk discourse, did not emerge until more recent times (Blaikie et al., 1994) and was not systematically influencing donor government development policy, even for the poorest hazard-prone environments, until later still (Tearfund 2003; DFID 2005; Tearfund and UN/ISDR, 2007).

Much of the new thinking was driven by an acknowledgement that disasters continued to have a significant impact upon society despite all the 'top-down' hazard-focused planning (see Appendix G). In other words, the dominant approach was not working.

The major differences in the emerging paradigm replacing the 'dominant approach' was that it emphasised *vulnerability* to hazards (rather than the hazards themselves), and those deemed to be 'at risk' were to be more fully engaged in the process of understanding and tackling the problem. Therefore the alternative to the 'dominant approach' is that of a bottom-up community led approach to disaster mitigation, revealing the realities of the interaction between hazards, people and their physical, natural, economic and social environment. As such, effective disaster mitigation is likely to revolve around political, economic and social processes (Heijmans, 2004). This is referred to as the 'political economy' approach by Maskrey (1989), but most actively promoted by NGOs and CBOs as the 'community based approach'. Based on work by the Institute of Civil Engineers in the UK (ICE, 2001) and endorsing Winchester's (2000) explanation of the growing trend for 'soft measures', Appendix H provides an example of how these considerations have influenced modern civil engineering planning in relation to flood risks.

A 'community-based approach' can be better able to assign an appropriate level of prioritisation to the management of the impact of potential hazards, in light of their frequency and ability to cause damage and disruption (Lavell, 2003). Through the engagement of the community, Maskrey (1989) and Lavell (2003) illustrate how it is possible to observe how hazards fit within the confines of the other pressures experienced, such as the need to be close to work opportunities for livelihood development. Thus reducing vulnerability to a flood or a coastal storm, or harder still a high-impact yet low-return period earthquake or tsunami, is less likely to overlook the normal everyday issues and concerns (Winchester, 2000; Lavell, 2003; IFRC, 2007[42]). After all, as Maskrey (1989, p.35) explains, "For most people, the separation of 'natural' disaster from the permanent disaster in which they live is not common sense. It is that permanent disaster which explains the impact of natural hazards and not vice versa".

The value in the community-based approach is increasingly recognised beyond its most prominent NGO and CBO base. Other stakeholders are however still prone to under-estimate the contribution local communities can make. For example, even the 'High Powered Committee on Disaster Management' in India states that, "The community as an effective institution is yet to take shape in this country with low literacy levels and widespread poverty" (Government of India, 2002, p.129)[43]. Importantly, the 'Hyogo Framework for Action 2005-2015' (UN/ISDR, 2005) has now accelerated the 'community based approach' agenda among governments by endorsing this perspective, a significant progression from the previous Yokohama conference in 1994[44] (see Chapter 2.4.3).

[42] For example, in the aftermath of an earthquake in 1999 the Syrian Arab Red Crescent carried out a risk assessment among un-affected communities that nevertheless shared the same fault line. They discovered that people identified other risks, such as lack of water, pollution and health issues, as being of greater priority than earthquakes (IFRC, 2007).

[43] But they do go on to emphasise the efforts being made to form and strengthen community based organisations at grassroots levels.

[44] Personal communication with Professor Ian Davis regarding the 'Yokohama Strategy for a Safer World: Guidelines for Natural Disaster Prevention, Preparedness and Mitigation and its Plan of Action'

The combination of top-down and bottom-up approaches

Despite the progression in disaster risk management discourse towards a 'community-based approach', there are limitations in what can be achieved solely with community based risk identification, analysis and remedial action. For example, in terms of the identification and analysis of risk, communities may not place sufficient emphasis on risks they have not experienced, such as low-return period earthquakes, or risks associated with climate change[45]. And the constraints regarding the implementation of remedial action may be impeded by:

1. The high financial costs that are needed in implementing certain physical mitigation measures.
2. The reality that it is not possible, in the case of riverine flooding, to tackle flood risk in an upstream community without affecting a chain of downstream communities.
3. The necessary resources required to challenge the factors influencing risk creation.

Largely still in theory then, a combination of 'top-down' and 'bottom-up' strategies is emerging as the most prudent approach (UNDP, 2004, p.93), where predominantly information flows upwards and resources downwards.

2.2.6 Key principles of disaster risk management

Shifts in emphasis regarding emergency management and hazard management have been documented (Salter, 1998; Handmer, 2000 respectively), and the trends they highlight mirror the evolution of disaster risk management discussed in Chapter 2.2.5. These shifts in emphasis are summarised in Figure 2.7.

[45] In such situations a 'no regrets' approach is required where immediate / short-term benefits are evident but they also go some way to address longer-term vulnerability reduction in the face of unknown threats.

Figure 2.7: Shifts in Disaster Management Emphasis

FROM:	TO:
Focus on hazards	Focus on vulnerability
Reactive	Proactive
Science / expert driven	Partnerships with wide range of stakeholders including those 'at risk'
Response management	Risk management
Symptoms	Causes
Local focus	Broader context

Source: Adapted from Salter (1998) and Handmer (2000, p.278)

These shifts have been influenced by, and are influencing, the way in which disaster risk management is undertaken. However there is much divergence in the principles adopted by the multi-faceted list of individuals, groups, organisations and disciplines engaged (directly or indirectly) in reducing risk (Etkin and Davis, 2007)[46]. In support of the 'Hyogo Framework for Action 2005 – 2015', and geared primarily for national governments, UN/ISDR (2007) summarised a set of basic guiding principles for implementing DRR. Due to their simplicity and up to date connection with this critical document they are listed here (UN/ISDR, 2007, pp.4-5):

- States [national governments] have the primary responsibility for implementing measures to reduce disaster risk.
- DRR must be integrated into development activities.
- A multi-hazard approach can improve effectiveness.
- Capacity-development is a central strategy for reducing disaster risk.
- Decentralise responsibility for DRR.
- Effective DRR requires community participation.
- Gender is a core factor in disaster risk and in the implementation of DRR.
- Public-private partnerships are an important tool for DRR.
- DRR needs to be customised to particular settings.

[46] As examples, these include 'Disaster Response: Principles of Preparation and Coordination' (Auf der Heide, 1989), the 'Code of Conduct' (IFRC, 1995), 'Principles of Emergency Planning and Management' (Alexander, 2002), and 'Critical Guidelines on Community Based Disaster Risk Management' (ADPC, 2006).

Despite various contributions from a plethora of diverse sources, such as UN/ISDR, no set of internationally *agreed* principles for disaster risk management exist. Perhaps this is not surprising. After all, as Schipper and Pelling (2006, p.24) remind us, "Disaster risk management most regularly refers to both disaster risk reduction (prevention, preparedness and mitigation) and humanitarian and development action (emergency response, relief and reconstruction)", and is therefore a vast subject. Further, the basis for engaging in disaster risk management can be highly politicized and heavily influenced by ethics in terms of the morality of investing in the protection of vulnerable people's lives and livelihoods.

A recent[47] analysis by Etkin and Davis (2007) of fifteen sources pertaining to principles of disaster risk management identified the most common issues referred to in relation to disaster risk management. Being generic summaries, these vary slightly in form and content from the UN/ISDR (2007) list, and include:

- The definition of roles and responsibilities.
- The assessment of vulnerability.
- Contingency planning.
- The sharing of information.
- Capacity building (also in UN/ISDR, 2007).
- The integration of disaster management into development (also in UN/ISDR, 2007).

Etkin and Davis (2007) used their analysis to propose a 'Pyramid of Principles' to help articulate a process[48], for use by actors in disaster risk management (see Appendix I). The Pyramid suggests that in disaster risk management:

- Ethical and core value principles (level one) influence strategic decision-making (level two).

[47] Early draft not yet published

[48] It is the process of searching for principles which, in the opinion of Etkin and Davis (2007), is essential. This process operates in both directions of the 'Pyramid of Principles' from ethics (at the base) to implementation (at the pinnacle) and vice versa.

- Strategic decision-making principles (level two) then have bearing on tactics employed (level three).
- Tactical principles (level three) affect implementation (level four).

Strength in the 'Pyramid of Principles' lies in its emphasis on its foundation level regarding ethics and core values. Government departments and line ministries, in particular, have a duty of care for public safety that includes the protection of citizens from natural hazards. This ought to be true despite differences of culture and context. Also important as a strong influence over what actually happens in practice is the next level, regarding strategy. Without an alignment of principles in these two areas that create an environment where measures to reduce risk are supported, then tactical and implementation efforts will be weak. And for certain, the implementation of disaster risk management measures will be constrained by an inability to address the causes of risk.

Box 2.3: Applying the 'Pyramid of Principles'

Appendix J considers how the disaster risk management issues that have emerged in the earlier sections of this chapter coincide with the different levels of the 'Pyramid of Principles'. This exercise indicates that most issues of disaster risk management that have been identified in earlier sections are connected with 'strategic principles'. Such principles are applicable in different contexts. It is only when 'tactical' and 'implementation principles' are considered that findings become more context specific.

Appendix J highlights that the only issue of disaster risk management that appears within the tactical level is that of risk assessment. However risk assessments are also part of *what needs to be included* in disaster risk management, and so they can also be viewed as strategic. Risk assessments therefore cross the boundary from being a generic necessity ('what should be done') to also becoming a practical method at the local level ('how it should be done').

In the words of Etkin and Davis (2007), "Principles exist to guide actions…or define the way to act". In other words they are more to do with ethics and strategies than actual implementation. Risk assessment therefore has the potential to be a useful pathway from what strategically needs to be done to how it should be done (see Box 2.3). What is more, risk assessment methodologies should not only be devised to identify what ought to be implemented. They can also face in the opposite direction on the 'Pyramid of Principles'

(downwards). Thus, through their implementation locally they can help to identify the ethics, core values and strategies (or lack of them) that may be contributing to the generation of risk in the first place.

2.3 Components of Community Risk Assessment

2.3.1 Introduction

As highlighted at the 'International Workshop on Community Risk Assessment'[49], CRA was recognized at the WCDR, as critical in "Identifying, assessing and monitoring risk at a community level, with the purpose of informing the design of locally appropriate risk reduction programmes and assisting in the monitoring and surveillance of risk at a community level" (DiMP, 2005, p.5)[50].

The progression of CRA towards this position of recognition has followed a similar pattern to the increasing emphasis given to the 'community based approach' to disaster risk management over the last couple of decades, as the two subjects are inextricably linked. The introduction and increasing prevalence of community based risk assessment tools are evidence of its growing importance[51]. Notable examples include: the introduction of the 'Capacities and Vulnerabilities Analysis' (CVA) framework (Anderson and Woodrow, 1989), the widely used IFRC 'VCA Toolkit' (IFRC, 1999 revised in 2006/7) and the development of the ProVention Consortium (2008) 'CRA Toolkit' which is a register of methodologies with accompanying guidance notes (see Footnote 51).

[49] Cape Town, South Africa, 31 May – 2 June 2005

[50] The 'Hyogo Framework for Action 2005-2015' in relation to the importance of Priority No.2 states, "The *starting point* for reducing disaster risk and for promoting a culture of disaster resilience lies in the knowledge of the hazards and the physical, social, economic and environmental vulnerabilities to disasters that most societies face, and of the ways in which hazards and vulnerabilities are changing in the short and long term, *followed by action* taken on the basis of that knowledge" (UN/ISDR, 2005, p.7, para 17). [Author's use of italics for emphasis.] However, for more information see Chapter 2.4.3.

[51] The ProVention Consortium (2008) 'Community Risk Assessment Toolkit' currently [October 2007] lists twelve 'comprehensive manuals' (including Venton and Hansford (2006) based on 'Participatory Assessment of Disaster Risk'), seven 'step-by-step' manuals, six 'guidelines', two 'overviews', one 'training manual' and one document on 'lessons learned'.

Prior to a description on the components of CRA, Box 2.4 and Appendix K highlight that there is concern regarding the use of the word 'community'.

Box 2.4: What is a Community?

Appendix K highlights how the term 'community' has led to some confusion in meaning and in particular it emphasizes the perspective of Shaw and Okazaki (2003 and 2004). Based on their view, 'community-based' within the context of this thesis, and perhaps in CRA and CBDRM more generally, is taken to relate to a geographical exposure to the same hazard(s) or disaster(s) and a sense of 'mutual support' among community members.

Furthermore, particularly in regions of conflict and insecurity, the concept of a stable 'community' is unlikely. This has significant ramifications for the application of CRA and CBDRM.

The key components underpinning CRA are outlined below. Although these components have been evolving more or less in the order in which they are presented, the process has been fluid, iterative and overlapping. The four major components described here are:

- The inclusion of capacity analysis in CRA.
- The full participation of local stakeholders in CRA.
- The link between CRA and CBDRM.
- The expansion of CRA beyond local community boundaries.

Some specific methodologies are referred to within the following sections to provide examples of how theory has been applied in practice.

2.3.2 The inclusion of capacity analysis

According to Wisner et al. (2004, p.270), since the coping patterns of ordinary people strongly influence the level of loss suffered, their chances of recovery, as well as their survival, it is essential that evaluations of vulnerability include detailed accounts of how people cope. In other words, an understanding of people's capacities should be a key component of CRA.

This concept, although important, is not new. The development of participatory tools and techniques in the 1970s, by Professor Robert Chambers[52], was based on a belief in local strengths and abilities. And the same concept was enshrined in the 'Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief' in 1994 with the words, "We shall attempt to build disaster response on local capacities" (IFRC, 2004, p.9). Now 413 agencies worldwide have subscribed to this Code, highlighting an increased recognition, and adoption, of the principle of capacity analysis within disaster response. Capacity assessment / analysis is now accepted as a fundamental component of all CRA methodologies, as demonstrated in the 'CRA Toolkit' methodologies and case studies (ProVention Consortium, 2008).

The 'Capacities and Vulnerabilities Analysis' (CVA) method developed by Mary Anderson and Peter Woodrow (1989) is a community based risk assessment tool specifically designed to address this issue of including capacity analysis as a part of risk assessment. The tool is described in greater detail in Box 2.5.

Box 2.5: Capacities and Vulnerabilities Analysis Matrix

The CVA method was designed and tested in the late 1980s by an inter-NGO initiative, the 'International Relief / Development Project' (IRDP), in Asia, Africa and Latin America. The methodology and eleven of the thirty case studies of its application under the IRDP were then published in 'Rising from the Ashes: Development Strategies in Times of Disaster' by Anderson and Woodrow (1989). The purpose of CVA was to "help the givers of aid learn how to give it so that it supports the efforts of people to achieve social and economic development". In other words its original purpose was to help make relief interventions more developmental. But it has, in recent years, been used more widely (outside humanitarian organisations) for pre-disaster project planning, in conjunction with other diagnostic tools.

The CVA matrix (Figure 2.8) has become familiar to many relief and development professionals. Its particular strengths are its simplicity and its clear linkage of vulnerability with capacity. However, according to Peter Woodrow, a weakness is that, "The framework is static and does not show the dynamic nature of interactions and connections"[53].

[52] Beginning with Rapid Rural Appraisal (RRA)
[53] Personal communication at a meeting in Cambridge, Massachusetts, 12 August 2004

Figure 2.8: The Capacities and Vulnerabilities Analysis Matrix

	VULNERABILITIES	CAPACITIES
Physical/Material What productive resources, skills and hazards exist?		
Social/Organisational What are the relationships and levels of organisation among people?		
Motivational/Attitudinal How does the community view its ability to create change?		

Source: Adapted from Anderson and Woodrow (1989) by Palakudiyil and Todd (2003)

Despite the clear need for an increased inclusion of 'capacity' in risk assessment, progress has nonetheless been slow. According to the 'World Disasters Report 2004' (IFRC, 2004) and numerous post-disaster evaluations, such as the findings of the 'Tsunami Evaluation Coalition' (Cosgrove, 2007), humanitarian organisations still commonly fail to assess, let alone harness, the capacities of those at risk.

Indeed, while capacities are now certainly more widely acknowledged as being critical in the risk assessment process and as a basis of CBDRM (Wisner et al., 2004, p.339), according to Anderson, the drive for 'capacity analysis' is frequently replaced by 'capacity building'[54]. This undermines the essence of what CVA hopes to achieve. Through capacity *analysis* people's existing strengths and resources are identified. These can then be supported and not undermined. Through capacity *building* Anderson believes that, like focusing on vulnerabilities and needs, outsiders tend to look for missing strengths and resources, as *they* deem important, rather than those that the community prioritises.

[54] Personal communication at a meeting in Cambridge, Massachusetts, 27 June 2006

The best documented and perhaps most significant adoption of the CVA method itself has been in the Philippines by the 'Citizens' Disaster Response Centre and Network of NGOs' (CDRC/N) (see Appendix L).

2.3.3 The full participation of local stakeholders

The full participation of local stakeholders in CRA has become accepted good practice. For example, Jeff Guttman, Vice President of the World Bank, during his opening address to the 'Global Platform for Disaster Risk Reduction'[55] stated, "There is no subject that requires greater participation than disaster risk reduction". The overriding goal in participation of this nature is for the people affected by the impact of hazards to be actively engaged in understanding the problem, gaining self-confidence (Victoria, undated) and tackling it in a sustainable manner (Shaw and Okazaki, 2003 and 2004).

Twigg (2005) explains that, "By the mid-1990s, a growing body of supporters and some skilful lobbying had pushed participatory approaches into the policy mainstream." He states that, "Today, virtually every agency working in the field of disaster risk reduction is either involved in community-based initiatives, supports them financially or technically, or endorses them in its policy statements." Community participation was included in the 'Yokohama Strategy'[56]. It appears that the participation in CRA of those most affected by disasters is not only desirable for effective DRR to occur (IFRC, 2006a), but an essential prerequisite not least to encourage its sustainability. In fact the IFRC, based on experience over the past twenty or so years, confesses that, "the enthusiasm generated by [CRA] has sometimes led [National Societies] to confuse its participatory

[55] Geneva, 5 June 2007

[56] The 'World Conference on Natural Disaster Reduction' at Yokohama in 1994 affirmed that 'Community involvement and their active participation should be encouraged' and called for emphasis to be given to programmes promoting community-based approaches to vulnerability reduction (Twigg, 2005). However this statement is a little misleading. The 'Yokohama Strategy and Plan of Action for a Safer World' (UN IDNDR, 1994) did not have the political impact of the later and stronger 'Hyogo Framework for Action 2005 – 2015' (UN/ISDR, 2005) (see Chapter 2.4.3).

method with its purpose (IFRC, 2006a, p. 29)". In other words, participation became the goal, not risk reduction.

However, various significant issues have emerged that go some way to explain why, despite the endorsement of local participation, meaningful and action-orientated participation is rare.

Participation in practice

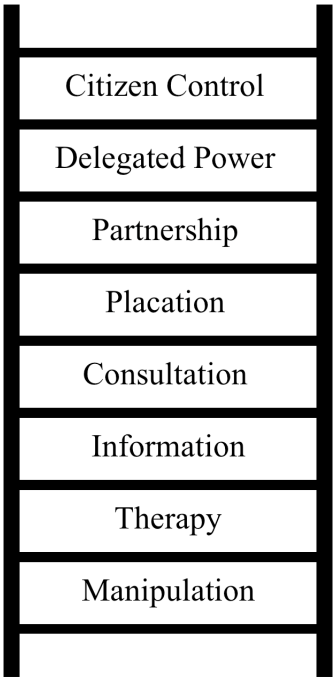
Participation in the view of Dudley (1993) and IFRC (2004, p.30) is often no more than collaboration in externally driven interventions. Anderson, who believes that, "Participatory approaches all too often get turned into procedures"[57], expands this observation to suggest that participatory approaches "can be counter-productive and manipulative." In such cases people's 'participation' may be sought after as part of an assessment that emphasises the needs of external agents to collect data. What is more the external agent's interpretation of what this data means, in terms of people's vulnerability (and capacity), is often considered more important than the perspective of the people themselves (Shaw and Okazaki, 2003, pp.76-77). An assessment process that also incorporates *local* analysis and planning is required (Twigg, 2004, p.126 and IFRC, 2007). These crucial components should not be solely in the hands of external agents.

Arnstein (1969) developed 'a ladder of citizen participation' (Figure 2.9) to demonstrate different levels in participation, and highlight the differences between meaningless and meaningful participation. The bottom rungs of the ladder, manipulation, therapy (making people feel good) and informing, actually contain *no* participation at all. Consultation and placation are also one-sided with information flow going in just one direction, and thus considered as tokenism. It is only the top rungs of the ladder where meaningful participation occurs (IFRC, 2007). Criticism of claiming participation in CRA is therefore based on a belief that claimants are actually engaging with communities in a way that

[57] Personal communication at a meeting in Cambridge, Massachusetts, 27 June 2006

revolves around processes and 'power' exchanges associated with the bottom part of the ladder.

Figure 2.9: Ladder of Citizen Participation



Source: Arnstein (1969)

Challenges in participation

One of the reasons why, in principle, community participation may be trumpeted but in practice shortcomings are evident is because true community participation is not straightforward, as highlighted by the following issues.

Exposing people's differing social status

Considering the local level alone, it is clear that communities are not homogenous (Twigg, 2005) (see Box 2.4). In the words of Wisner et al. (2004, p.87), "Any analysis of a disaster must explain differential vulnerability to, and the impacts of, a disaster – why wealthier people often suffer less, and why women and children may face different (and sometimes more damaging) outcomes than men and adults. Particular groups, defined by

ethnicity, class, occupation, location of work or domicile may suffer differentially from others." The process of participatory assessment needs to identify these issues and seek remedies. But this inevitably has social ramifications, as some with high levels of power and influence may be expected or challenged to adjust their normal mode of operation so as to ensure that power and influence is shared more equitably. Participation can thus challenge the status quo and existing power relations, as well as the cultural acceptability of empowering local 'vulnerable' people.

Different terminology

Further, the facilitator of a CRA process has to contend with differences in terminology. For example, vulnerability, capacity, and other terms used in disaster management are not used locally in the same way as by external professionals (Kotze, 1999; Heijmans, 2001). However, drawing on concepts described as part of the 'Access Model' (first introduced in Blaikie et al., 1994), Heijmans (2001) suggests that, "Although local people do not use the concept of 'vulnerability' to describe their worsening situation, they feel the stress, face difficulties, talk about 'risks', and make risk-taking or risk-avoiding decisions. They do not only take into account the possible exposure to danger and future damages (i.e. what outsiders generally refer to as 'vulnerability'), but also their capacities, options and alternatives, and the implications of their decisions." Therefore a facilitator needs to be able to adapt terminology so as to suit local understanding and make it relevant, as well as interpret the responses of local communities.

Unrealistic expectations

Another significant challenge faced by a CRA facilitator is associated with the managing of community expectations. Cannon (2003) discovered numerous examples[58] from National Red Cross / Red Crescent Society experiences that VCA raises people's expectations. And, as an example, in the experience of the Philippines National Red Cross Society conducting community meetings in several Barangays[59] so as to select a

[58] For example on pages 4, 5, 6, 20, 45 and 54
[59] Village level administrative area

location for the implementation of an 'Integrated Community Disaster Planning Programme' (ICDPP), expectations were raised that turned into disappointment when some communities were not selected (PNRC, 2002, p.12). Of course it is very difficult to look for and encourage the empowerment of people through a CRA process, without raising people's expectations. Effective management, rather than suppression of these expectations, is key (IFRC, 2006a).

Choice of facilitators

To help overcome such challenges and bridge the gap between an external facilitating agency and community members, Davis (2003) recommends 'de-professionalising' assessments all together by engaging community leaders in the process. Rather than these being 'traditional' community leaders, these could include teachers, religious leaders, midwives and others with positions of local influence. The UK Department for International Development (DFID) recommends adopting 'problem-led' rather than 'discipline-led' approaches, using multi-disciplinary teams to engage with the community (DFID, 1999-2001 Guidance Sheet 7.1). And Anderson[60] emphasises the importance of "A facilitation process that is based on trust and rapport [to help] enable the process to occur naturally, without rigidity." However there are even potential pitfalls in these approaches, as explained by Twigg (2004, p.120). "Facilitators need to be careful, when choosing their local partners to organise and plan activities, and when identifying whom to include in those activities. Local authorities, political leaders and business people are often keen to be involved, but may have little understanding of the needs and circumstances of the most marginal and vulnerable groups; or they may have their own agendas. On the other hand, members of local elites cannot be disregarded as they have the power to disrupt community-based initiatives. Deciding how to acknowledge and include local leaders is one of the most difficult challenges in participation."

[60] Personal communication at a meeting in Cambridge, Massachusetts, 27 June 2006

Participatory tools and techniques

Recognising a need for community participation in risk assessment and acknowledging the challenges in achieving it, "the techniques that have for the last [twenty] years been the preferred methodology for participatory development" (Brown et al., 2002, p.1) have been merged into the desire to assess vulnerabilities and capacities. These techniques, popularised by Professor Robert Chambers from 1983[61], are known as 'Rapid Rural Appraisal' (RRA)[62], and 'Participatory Rural Appraisal' (PRA)[63] but now more recently known as 'Participation, Reflection and Action'. Appendix M provides details on the approach to RRA / PRA of 'reversals' which, through demonstration of usage in countless approaches to CRA (at least in theory if not in practice), is accepted as good practice.

Much of the innovative practical work associated with participatory appraisal techniques occurred in India in the early 1990's. Since this time the spread of application has been rapid. However Chambers feels that the chief concern is not regarding whether the techniques are being used, but how *well* they are being used (1997, pp.113-114).

Vulnerability and Capacity Assessment

The widely known IFRC 'VCA Toolkit' provides a useful example of a CRA methodology that explicitly draws on various RRA / PRA tools and techniques[64].

As the Red Cross moved from its traditional strength of emergency response and relief and into the more pro-active field of disaster preparedness, it became clear that the organisation needed a framework for diagnosing vulnerability. It built on the concepts enshrined in the CVA matrix and developed 'Vulnerability and Capacity Assessment'

[61] Chambers, R. (1983) *Rural Development: Putting the Last First*. New York: Longman
[62] Developed in the late 1970's and early 1980's
[63] Developed in the late 1980's and early 1990's
[64] Some of the RRA/PRA tools commonly adopted within CRA methodologies include: Secondary data reviews; Direct observation; Semi-structured interviews; Historical profiling; Mapping (hazard, resource and risk); Transect walks; Seasonal calendars; Institutional and social network analysis; Livelihood and coping strategies analysis; and Problem trees (see Figure X – 1 and Appendix AR for examples)

(VCA). Tackling the issue of vulnerability more systematically with the aid of VCA would, it was felt, result in significant increases in the effectiveness of National Society work through the reduction in the vulnerability of the people the organisation seeks to serve. Heralded as a significant step forward in the culture of the Red Cross, VCA, it was claimed, would "contribute to a greater understanding of the nature and level of risks that vulnerable people face; where these risks come from; who will be the worst affected; what is available at all levels to reduce the risks and what initiatives can be undertaken to strengthen the impact of (National Society) programmes to raise the capacity of people at risk" (IFRC, 1999).

The process of implementing a VCA in the field is three-fold:

- Identification of threats[65] (natural, man-made, deteriorating conditions).
- Vulnerability assessment (based on location, poverty and marginalisation due to other factors).
- Capacity assessment (based on the components of the CVA matrix).

This basic sequence is considered important and as such is adopted by numerous humanitarian and development organisations in their own methodologies (ProVention Consortium, 2008).

The 'VCA Toolkit', first published in 1996, that guides the facilitator through these stages, was designed as a diagnostic tool, outlining numerous existing RRA / PRA tools, principles and techniques to be used for better-informed relief, mitigation and development programming. The 'Toolkit' was intended to identify household and community level strengths and weaknesses. Then, going beyond the diagnosis limitations of the CVA approach VCA, according to the IFRC, could be used as a planning tool.

[65] The IFRC states that a National Society must give serious thought to linking local community-based investigations to risk mapping of hazards that extend beyond the locality and exceed the capacity of local communities (IFRC, 2006a, p.30). This confirms a suspicion that at the outset VCA does not place a significant emphasis on hazard assessment, as this would normally involve a detailed analysis of hazards utilising secondary data sources as well local perspectives.

Based on VCA's extensive use and an evaluation by Cannon et al. (2003), revisions to the methodology have been introduced. Box 2.6 provides further details.

Box 2.6: Revised Vulnerability and Capacity Assessment Toolkit

The wide menu of techniques offered in the 'VCA Toolkit' encouraged each National Society to select what was considered most relevant to their specific localised circumstances. Individual VCA's have consequently been different in both structure and content[66]. Some are sector-specific, focusing primarily on what the individual National Society does best; others are broader in scope, assisting the Society to explore new avenues of action (Cannon et al., 2003). Therefore, as well as the variety of findings being dictated by location (and hence a whole host of varying social, political, economic and environmental issues) and sector specialisms, they are also strongly influenced by the capacity of the National Society itself. This led to an area of concern.

It became evident that the VCA methodology was evolving and stretching from its CVA origins in many different ways; including somewhat confusingly as an 'organisational development' (OD) tool[67] (IFRC, 2006a). The quality of the planning function was also disputed (Cannon et al., 2003) on account of an emphasis on tools being used primarily for data *collection* and not *analysis*.

The evaluation findings therefore led to the development of a revised set of publications (IFRC, 2006a and IFRC, 2007) that endeavour to improve the quality of the VCA process. A key message evolving from these publications surrounds the methodology of VCA as a participatory tool (IFRC, 2007). As such National Society's are warned that the assessment and analysis of risks and potential remedial actions may fall outside of the IFRC mandate. In other words, the community may prioritise safety measures regarding road accidents over landslides, or updated school buildings over evacuation routes.

2.3.4 The link with community based disaster risk management

While CBDRM places the management of hazards and risks within the context of the people who experience them, and CRA is a technique that identifies, analyses and prioritises such risks, the link between the two is not explicitly made.

[66] Some examples of well-publicised VCAs include, Palestine, Uganda, The Gambia and Mongolia (Cannon, et al., 2003).

[67] Personal communication with Terry Cannon, 2006: Establishing the organisational capacity of individual National Society's, under the banner of VCA, instead of basing energy on community focused initiatives has been a growing criticism of the IFRC in recent years.

Linking community risk assessment with action planning

As expressed by Enders (2001, p.52), it used to be believed that once an individual had the information they needed, they would act 'appropriately'. However, Enders explains how it is now recognised that there are several steps between an individual receiving information and subsequently changing their behaviour.

While a CRA is undertaken with the aim that this will lead to positive changes in vulnerability reduction through a participatory process of awareness raising, in practice this connection is frequently inadequately addressed. For example, in his overview of regional experiences of CRA in 'Small Island Developing States' (SIDS) presented at the 'International Workshop on Community Risk Assessment' (DiMP, 2005, p.15), Jeong Park[68] commented that through CRAs, "Problems were identified, but the extent to which community-based solutions were identified was questionable, with no real link from problems to solutions". In other words CRA did not lead to CBDRM. The endorsement of this experience by other participants indicates that this is not at all uncommon. CRA methodologies tend to be strong in the realm of data *production* to the detriment of the transformation of information into appropriate *action* through balanced critical vulnerability analysis. As pointed out by Cannon et al. (2003, pp.11-30), this is problematic as, "although the data collection process is vital, it is the analytical processes that turn the exercise into an effective tool".

Externally driven data collection exercises generate significant levels of resentment locally because, in the words of Wisner (2005), "The reality of poor, marginal, and excluded people is that they have few surplus resources, time, or patience for assessment without action." This perspective is increasingly shared among some disaster management professionals. For example, Marla Petal[69] expressed her frustrations and summed up a general mood among practitioners at the aforementioned workshop by saying, **"**We are deluding ourselves by using the term risk assessment if we do not

[68] Regional Disaster Management Delegate, Regional Delegation for the Pacific, IFRC
[69] Director of Community Mitigation Programmes, GeoHazards International

transform assessments into action" (DiMP, 2005, p.18). These and similar sentiments have led to recent statements such as:

- [CRA] is an investigation that implies a commitment [to action] (IFRC, 2006a, p.29).
- At a minimum, a [CRA] should lead to the design of a Community Based Disaster Preparedness Plan that engages local people in strategies to reduce their vulnerability to specific natural hazards (IFRC, 2006a, p.33).
- Risk assessments are the basis for risk reduction strategies and preparedness planning, and should [also] be the foundation for development plans (UNEP and UN/ISDR, undated - 2006 or 2007 – p.19).
- In relation to the 'Hyogo Framework for Action 2005-2015', Priority No.2[70]: Among other things, [risk assessments] are a basis for the identification of effective structural and non-structural mitigation measures (UN/ISDR, 2007, p.35).

In most cases these statement are rhetoric. However, in light of the renewed concern to link CRA with action planning, this critical issue is now beginning to influence the development of some emerging CRA methodologies. For example, ActionAid (undated) developed the methodology 'Participatory Vulnerability Analysis' (PVA) in part, "translating the knowledge of vulnerability into practice". The updated IFRC VCA is also mindful of this need (IFRC, 2006a). Importantly, the CRA methodology developed and tested in this research also seeks to improve links between CRA and action planning (see Chapter 3 and 5).

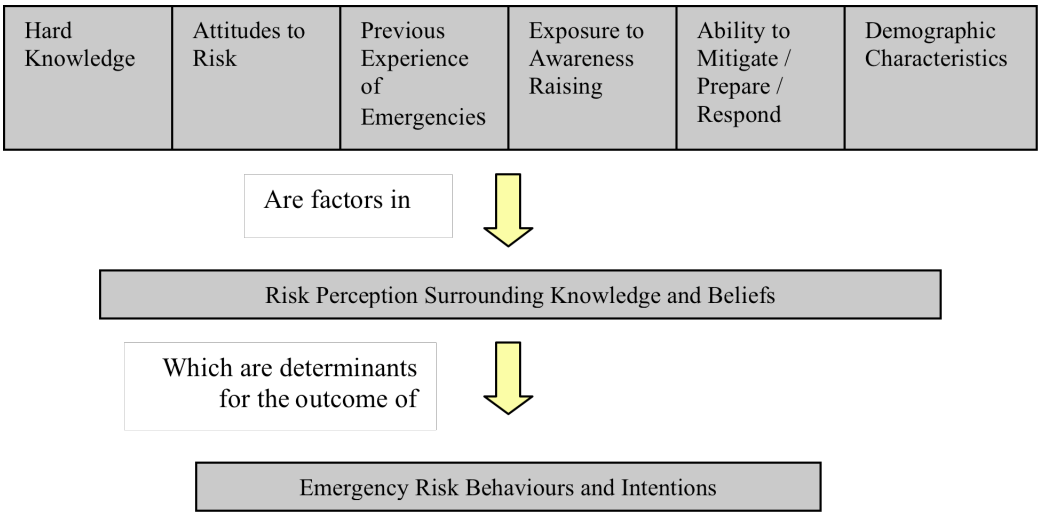
Those involved in the practical outworking of such methodologies need to be aware that local vulnerability reducing actions are only likely to occur through a CRA process when a number of issues are considered and addressed. These are associated with people's own knowledge and awareness, attitudes to risk, experience of natural hazards, emergencies or disasters, and the actual ability of local people to mitigate and prepare for future events

[70] Identify, assess and monitor disaster risks and enhance early warning

through the availability of assets and resources. This latter point is highly significant as, without careful facilitation, problems can be identified that appear way beyond the means of poor communities to manage on their own; a point made by Hasan regarding flood mitigation in Bangladesh (Shaw and Okazaki, 2003, p.31). Thus expectations are raised unrealistically high and disappointment becomes inevitable.

The issues affecting people's behaviour highlighted above are, in the view of Enders (2001), supplemented with a consideration of the demographic characteristics of the community. Together these are all factors affecting people's perception of risk, which determine actions undertaken to manage them (Enders, 2001; Shaw and Okazaki, 2003) (see Figure 2.10).

Figure 2.10: A Framework for Investigating Emergency Awareness and Preparedness



Source: Enders (2001, p.54)

The sustainability of community based disaster risk management

As highlighted by the previous discussion, CRA needs to be linked with action planning to develop into a CBDRM process. In so doing it ensures that risks identified at the community level are addressed and actions implemented.

However, if actions, structural or non-structural, are implemented in response to an analysis of local conditions, there are significant factors that influence their effectiveness in reducing risk. Besides the measurement of actual reductions in risk achieved through CBDRM, which is notoriously hard to determine[71], broadly speaking effectiveness can be related to the sustainability of CBDRM (Shaw and Okazaki, 2003) (and its ability to be scaled up[72]).

Sustainability related studies on CBDRM (Shaw and Okazaki, 2003[73] and 2004; ADPC, 2006), focus attention on the following core subjects: local capacities, local participation, and integration of CBDRM with development programming. Therefore these will be considered in turn[74].

Local capacities

CBDRM is greatly enhanced by the existence of a culture of coping with crisis and cultures of disaster reduction (Shaw and Okazaki, 2004). Any such local capacity must not be undermined. Subsequent to an appreciation of this context of known capacities,

[71] Recent examples that attempt to provide clarity on this, which may help in the evaluation of CBDRM, as well as for other purposes, include the 'Outcome Indicators' in ADPC (2006) and the 'Characteristics of a Disaster Resilient Community' (Twigg, 2007). Examples of some recent high profile macro level indicators include: The 'Disaster Risk Index' (UNDP, 2004) and 'Natural Disaster Hotspots: A Global Risk Analysis' (Dilley et al., 2005). 'Cost-Benefit Analysis' (CBA) is also a tool that has been applied to DRR to measure its effectiveness, and is the subject of a new 'Major Study of Economic Costs and Benefits of Disaster Risk Reduction' sponsored by the UN and World Bank and coordinated by UN/ISDR (to be presented at the G8 meeting in Hokkaido 7 – 9 July 2008)

[72] See Chapter 2.3.5 for a discussion on the subject of scaling-up CBDRM

[73] In 2002, UNCRD launched a three-year project 'Sustainability in Community Based Disaster Management' with the aim of studying the effectiveness of grass-roots initiatives that lead to successful practices. Shaw and Okazaki (2003) is based on the findings.

[74] Several of the points made in the sections below relate to the process and outcome indicators, that can equally be considered as principles of CBDRM, developed by ADPC (2006). Appendix N summarises these principles.

their further strengthening and the additional interventions required to address any shortfalls in resources through the tangible and intangible accumulation of assets, can be introduced (Shaw and Okazaki, 2003 and 2004). Indeed the starting point for sustainability in CBDRM, according to SEEDS (2003) and Shaw and Okazaki (2003), lies in recognising and understanding the importance of the indigenous coping mechanisms of communities vis-à-vis the impact of disasters.

Local participation

Through participation, good rapport and trust is built, an important principle of CBDRM (ADPC, 2006), and a sense of community ownership is established: clearly a key component of sustainability (Victoria, undated). A CBO should underpin participatory disaster risk management planning, community managed implementation of risk reduction measures and participatory monitoring and evaluation (ADPC, 2006). These elements of sustainable CBDRM can be supported through CRA, which itself should take into account different perceptions of risk and different levels of acceptable risk through high levels of local participation, and also the participation of a wider array of stakeholders (Shaw and Okazaki, 2004). Indeed a participatory risk assessment process can be considered an imperative to achieve sustainable CBDRM actions (ADPC, 2006).

But experience suggests that the local perception of vulnerability, and consequentially remedial options, is not uniformly given as much attention against the perceptions of the agency assisting (Shaw and Okazaki, 2003). Participation is weak (see Figure 2.9). Most of the case studies used as a basis for this verdict by Shaw and Okazaki are presented using objective risk assessment, where scientific experts' calculations of risk are the primary bases for defining vulnerability. In particular what is required for CBDRM to be effective is a truly participatory blend incorporating and emphasising local perceptions on vulnerability with expert knowledge on hazard assessment (Shaw and Okazaki, 2004). A rare example of this is Cronin, S. et al. (2004) regarding participatory methods of incorporating scientific with traditional knowledge for volcanic hazard management on Ambae Island, Vanuatu.

Integration of community based disaster risk management with development programming

According to Victoria (undated), the integration of CBDRM with development programming results in CBDRM measures that are related to issues such as poverty, social inequity and environmental resource depletion and degradation. In other words, sustainable CBDRM measures are not confined to the more commonly associated 'disaster' interventions, such as early warning systems or evacuation drills, although these are deemed of special importance by ADPC (2006). By integrating CBDRM projects into regular development planning and budgeting, sustainability is more likely. This is best achieved through legislation (Shaw and Okazaki, 2003)[75].

2.3.5 The expansion beyond local community boundaries

Not withstanding the importance placed upon subjects such as local capacities, the participation of vulnerable groups and local ownership, the overriding impingement upon the effectiveness of CRA and CBDRM is observed to be in relation to its connectedness with the government, NGOs and / or international organisations (Shaw and Okazaki, 2003) among other macro-level influences[76]. Twigg (2007) refers to this as the 'enabling environment.' Indeed it is the process of building political commitment (or 'buy-in') from the government that is considered 'essential groundwork' if CBDRM is to flourish (ADPC, 2006). So, in the words of Andrew Maskrey[77], "The challenge is not in doing

[75] By virtue of the 'Local Government Code' of 1991 in Pampanga Philippines, essentially a devolution and decentralisation act, local people are given the chance to take part in the formation of the general development plan of the locality. The law though provides the framework for the integration of disaster management into the overall socioeconomic development plan that leads to the regular allotment of funds for disaster management at the community level; a critical need (ADPC, 2006). This link is made on account of the fact that disasters clearly impact local development and economic objectives on a regular basis in this area. What is more, the presence of dynamic and innovative local government staff, acting as champions for advocating solutions and incorporating people's participation, is also cited as a key enabling component (Shaw and Okazaki, 2004).

[76] For instance, the private sector is now receiving much more emphasis as a critical stakeholder in DRR, and other stakeholders such as the emergency services, media, religious institutions and civil society in general should not be overlooked.

[77] Personal attendance at the launch of DFID's book 'Disaster Risk Reduction: A Development Concern' (DFID, 2005) in London 2005

community based disaster management but in getting governments to engage in community based disaster management."

As we have seen already, our understanding of disasters, and consequently disaster risk, has become more and more closely aligned over recent years with the wider development paradigm (Anderson and Woodrow, 1989; Maskrey, 1989; Blaikie et al., 1994; Lavell, 2003; Twigg, 2004; UNDP, 2004; DFID, 2005). Most recently this relationship has culminated in the 'Hyogo Framework for Action 2005 – 2015' (UN/ISDR, 2005) (see Chapter 2.4.3). Simultaneously disasters are themselves shaping development, as they are now recognised to be a major block in attaining development goals (UN/ISDR and UNDP, 2007)[78]. For example, after Hurricane Mitch struck Central America in 1998, Carlos Flores, the President of Honduras, said in his now well-documented statement[79], "We lost in 72 hours what we have taken more than 50 years to build." John Holmes[80] highlighted that this accounted for a loss of 41% of GDP.

Therefore disaster risk, as experienced locally, is understood to be a manifestation of a much wider set of circumstances.

We have also seen how it is possible to trace this locally experienced phenomenon along Davis' 'progression of vulnerability' (Blaikie et al., 1994) or Cannon's 'chain of causation' (Cannon, 2003, see Appendix E). According to Buchanan-Smith and Christoplos (2004), an assessment should capture these underlying social and political factors that make some groups particularly vulnerable. But the authors don't find

[78] Of course development policy and practice has itself been shaped by its important relationship with numerous other influences. For example, poverty alleviation approaches (through mechanisms such as 'Poverty Reduction Strategy Papers' and 'Country Assistance Strategies'), the 'Millennium Development Goals' (http://www.un.org/millenniumgoals), the environment (for example, natural resource management and climate change), sustainable livelihoods approaches, governance, security (conflict resolution), gender equality, fair trade, population expansion pressures and the impact of HIV and AIDS (UN/ISDR, 2005).
[79] At an emergency meeting in El Salvador, 10 November 1988
[80] Personal attendance at the Keynote Speech by the United Nations Under-Secretary-General for Humanitarian Affairs at the 'Global Platform for Disaster Risk Reduction' in Geneva on 5 June 2007

sufficient evidence that this theoretical understanding is influencing practice[81].

Methodological gaps in community risk assessment

It is becoming increasingly clear then that maximum value in CRA as a methodological process will be achieved if, among the other important considerations documented earlier, the participants grasp, analyse and act upon the wider picture of how vulnerability can be created, sustained, reduced or ignored. Dr Ailsa Holloway[82] and Dr Mark Pelling[83] both made this point at the 'Social Vulnerability and Capacity Analysis Workshop'[84], with the words:

> "We need to link micro and macro level work; there are masses of local risk assessments and VCAs in southern Africa, but this is not connected to policy" (Holloway).
>
> "We need to move from a 'surface' analysis of risk and into the areas where these conditions are created" (Pelling).

However as recently as 2003 very few of the CRA reports examined in the study by Cannon et al. (2003), for example, demonstrated this advanced understanding of the differences between the root causes, dynamic factors and overt manifestations of vulnerability, or the 'selectiveness' of disasters in targeting specific vulnerable groups. Shaw and Okazaki (2004, p.ii) offer an explanation: "For decades, it was a common notion that grass-roots / community initiatives were the responsibilities of the NGOs. Thus, there were very few attempts made to incorporate the CBDM initiatives in national-level policy or international-level commitments".

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[81] They reference the interventions adopted in Gujarat post the 26 January 2001 earthquake, where "deep-rooted patterns of discrimination and unequal power relations were ignored or even reinforced" (Buchanan-Smith and Christoplos, 2004). Current knowledge would state that these contributed to the cause of the earthquake becoming a disaster.
[82] University of Cape Town, South Africa
[83] Kings College London, UK
[84] Geneva, 25 – 26 May 2004

In even more recent years, organisations with a focus on the local level do in contrast appear to have an increasing appreciation of such matters, and the need for this to be acted upon in practice. Some CRA related resources (for example, ActionAid, undated and IFRC, 2006a)[85] and high-level discussion forums[86] are beginning to make headway. A brief highlight of ActionAid's recent contribution is provided in Box 2.7.

Box 2.7: Participatory Vulnerability Analysis[87]

ActionAid's efforts to develop guidance on CRA, through the methodology 'Participatory Vulnerability Analysis' (PVA) (ActionAid, undated), is of interest due to the expansion of analysis from narrowly focused local-level factors. District (or project), regional / country, and international levels are included as well as the foundational community level. All the same, PVA suggests that, "People can use the process of vulnerability analysis to reflect on what they want to do about their situations. This *may* lead them to *begin to assert their rights and lobby local authorities* to perform better. The process itself will help to build advocacy skills among poor communities (ActionAid, undated, p.10). The guide for field staff goes on to suggest that, "Existing policies will change and protect the most vulnerable *if* policy makers *hear* the analysis of those who are vulnerable" (ActionAid, undated, p. 11)[88]. What PVA does not make clear is *why* these policy makers will want to take on board local analysis and opinion. After all, policy makers, or local government officials that may have a more direct link with them, are not necessarily actually engaged in the CRA process.

Despite these signs of progress, according to Buckle et al. (2003, p.83), "No one…has developed models that link risk, vulnerability, resilience, and day-to-day life in a coherent and puissant framework, nor have any analytical frameworks or models emerged that have managed to deal with the complex interactions of daily life, risk management, and disaster management in ways which *allow for the linkage and integration of these issues*

[85] And the CRA methodology 'Participatory Assessment of Disaster Risk' developed and tested in this research (which investigates the underlying causes of vulnerability) (see Chapters 3 and 6).
[86] For example, the 'Social Vulnerability and Capacity Analysis Workshop' in Geneva (25 – 26 May 2004), and the 'International Workshop on Community Risk Assessment' in Cape Town (31 May – 2 June 2005)
[87] Author's use of italics to emphasise key aspects of text
[88] Similar aspirations are expressed in the updated VCA (IFRC, 2006a, p.28), which states that if a VCA is to succeed, "National Societies – at both national and local levels – *need to forge partnerships and cooperate* with other institutions (e.g. government, NGOs, donors, etc.), *developing new advocacy skills* in the process."

between individual, group, community and system levels[89]." Buckle et al. (2003) goes on to explain that, "at local levels where the focus will be on discrete groups such as family units, clans, and tribes or geographically defined communities, this may not matter. *But for policy development at regional, state, and national levels, a coherent framework is an imperative*". This is also the opinion of Trujillo et al. (2000, p.30) with reference to experience in Latin America. They identify a need "for tools which could influence decision makers and direct their policies, and which might help to solve the underlying problems."

Due to the ensuing gap then between knowledge and understanding on the one hand (i.e. theory) and implementation on the other (i.e. practice), those engaged in CRA and CBDRM are left with an *awareness* that local-level activities are not sufficient on their own but only a general *encouragement* to try and find ways to respond to this critical dilemma so as to improve sustainability, scale and consequently overall effectiveness.

Links with government

As the ActionAid 'Participatory Vulnerability Analysis' (PVA) and IFRC 'Vulnerability and Capacity Assessment' (VCA) examples demonstrate, more recent CRA related material typically informs the individuals and groups engaged in CRA and CBDRM of the need to undertake actions in the form of advocacy, networking and multi-stakeholder partnerships[90]. Normally though no provision is made for this (Twigg, 2004, p.111). These actions are encouraged generally from the perspective that additional resources will be required from beyond the means of the existing (local) stakeholders in the process. For example, the new VCA material produced by IFRC (2007) states that, "The community and the National Society will *need to share* the VCA results with government and other relevant organisations [as] the community may not have sufficient resources to

[89] Author's use of italics to emphasise key aspects of Buckle et al. (2003)

[90] The aim is for a 'system' to be established to manage the CRA process, based in local government and linked into a national assessment system. Such a system would contain an integrated set of actors drawn from locally based NGO's, academics in areas where there are universities, local government officials and community leaders (ADPC, 2006).

build structures, such as retention walls. Outside support will be required – in this case, taking the form of advocacy, *so that government authorities respond* to the need" (IFRC, 2007, p.74). Similarly, the Philippines National Red Cross' Community Based Disaster Preparedness (CBDP) approaches are underpinned by the premise that local people have the motivation but generally lack the capacity to implement more ambitious disaster management strategies, while government agencies have the capacity, and with some support, can be motivated to act by aware communities (Allen, 2004, p. 110 and Allen, 2006, p.94)[91]. In other words, the general CRA processes being adopted identify that for risks to be addressed (through a community developed action plan), outside help will be needed through enhanced 'social protection' (see Appendix E). So risk can best be tackled by engaging with others that may have greater means to address it. Typically then this means government (Twigg, 2004). But in terms of improving understanding of the wider risk context – the social, economic, or political causes – it is very unusual for the CRA process to provide the means to aid the analysis of this with stakeholders, even at a local level alone[92].

Box 2.8 highlights how the Government of India – UNDP 'Disaster Risk Management Programme' (Government of India, undated) emphasises disaster preparedness at a community level, but in terms of mitigation this is perceived to only take the form of expensive structural measures requiring external funding.

Box 2.8: The Government of India – UNDP Disaster Risk Management Programme (Part 1)

Further to the development of Community Based Disaster Preparedness plans, when the Government of India - UNDP 'Disaster Risk Management Programme' is expanded to consider implications for disaster

[91] Another technique used to influence local government officials and policy makers is 'evidence' of the impact of CBDRM. Such as in Bangladesh with Practical Action's 'Voluntary Formation of Community Organisations to Implement DRR' programme (UN/ISDR and UNDP, 2007, p.6)

[92] However in Malawi, Tearfund's 'Small, Medium-Scale Initiatives to Control River Flow' programme can be considered a positive example of a multi-stakeholder approach involving local government officials. The programme draws on the use of a risk assessment process ('Participatory Assessment of Disaster Risk') that assesses the underlying causes of vulnerability to flooding (UN/ISDR and UNDP, 2007, pp.36-39). Likewise, in the Philippines, CDP's 'Mainstreaming Community-Based Mitigation in City Governance' work is important due to the open dialogues facilitated between high-level officials and the community, and the CBDRM and risk assessment training provided to City Officials who then provide training to communities (UN/ISDR and UNDP, 2007, pp.46-48).

mitigation, the emphasis upon funding requirements for structural measures is evident. "The villagers would develop a mitigation plan for each hazard for long term planning. These could be coastal belt plantations, cyclone shelters in cyclone prone areas, improved drainage systems in low lying areas, raising the platform of the community hall or school building etc. All mitigation plans would be forwarded to higher authorities for financial provision. All community mitigation plans are consolidated at Gram Panchayat (GP) level and become the part of the respective GP developmental plan. The mitigation plans would eventually be funded under the on going development programmes in the district, for which the District Magistrate / Collector is the nodal officer."
Source: Government of India (undated)

Further evidence to support this analysis of the situation is found by the fact that the full engagement and interaction of government officials in an open and investigative CRA and CBDRM process, or as Shaw and Okazaki (2004) express it, "the imperative for policymakers to have active discussions with the people", is rare. Linkages between local community stakeholders and government officials normally, if they happen at all, will not go much deeper than the inviting of local officials to an opening ceremony (e.g. Castellanos et al., 2005), or attending a CRA workshop (probably in part) (e.g. SLRC, 2004), or through a meeting on account of a semi-structured interview for the purpose of secondary data collection (e.g. MacGregor et al., 2005)[93]. It could be argued that through these approaches the door is prised slightly ajar so that once solutions beyond the means of the local community have been identified, the government are already aware of the assessment and are perhaps more likely to divert resources to support the initiative. This approach though appears to endorse the 'hazard-focused', 'top-down', 'structural mitigation', 'tangible outcome' orientated paradigm that has been the 'dominant approach' for many years (Maskrey, 1989) (see Chapter 2.2.5). For example, the emphasis on the raising of the ground above flood-levels in Bangladesh (BUDMP, undated) and the construction of bridges and community centres in Pakistan (Malagoda et al., 2005). So if government officials are engaged in a CRA process this rarely challenges their commonly held perspective on methods for managing disaster risks. As such, in the

[93] Indeed government officials were not invited to be a part of the 'Social Vulnerability and Capacity Analysis Workshop' in Geneva, 25 – 26 May 2004 or the 'International Workshop on Community Risk Assessment' in Cape Town, 31 May – 2 June 2005

findings of Dr Tom Mitchell's 'Future Search'[94], "It is hard to get lasting results where political leaders are not fully involved in the process" (Mitchell, 2004).

However the onus is not only on NGOs, CBOs and local community members in general to engage government officials in CRA processes. In the words of Margareta Wahlström[95], "Disaster risk managers need to listen and learn from the grassroots up – not vice versa – so that [they] can build upon experiences of risk reduction that have been tried and tested in the crucible of local experience" (UN/ISDR and UNDP, 2007)[96]. However the benefits of a local community driven programme will be limited, "when the focus is on functions that local people regard as principally a responsibility of government agencies" (Allen, 2006, p.92). In other words, there are risks involved in developing local schemes in the *hope* that governments will subsequently take responsibility. In fact Twigg (2004) highlights that, "Central governments without financial resources may simply abdicate their responsibilities" for CBDRM if others, such as international non-governmental organisations (INGOs), are willing to intervene with their own resources. Professor Ian Davis expressed another perspective challenging the effectiveness of a CBDRM initiative that hopes to inspire 'disaster risk managers to listen and learn'. He commented in a presentation[97] regarding twenty-five key principles of disaster management, "*Coordination* is the product of mutual respect and trust; *Trust* is a product of good working relationships between persons and organisations; *Good relationships* are a product of time spent together." But on account of a 'we know best' attitude among ruling classes and a desire among politicians to wield political power, especially in countries of highly centralised political systems, most countries still see the 'command and control' approach, with limited community involvement, as the preferred

[94] The idea of 'Future Search' was based on getting the whole DRR related 'system' together in one room (including emergency services, NGOs, private and public sector, scientific / technical, government agencies)
[95] UN Assistant Secretary-General, Deputy Emergency Relief Coordinator
[96] DFID (1999-2001) in relation to its Guidance Sheet No. 2.4 on sustainable livelihoods also calls for a much better understanding of the effects of policies on people (what actually happens as opposed to what is assumed will happen).
[97] For MSc in Disaster Management students at Cranfield University

method[98]. This is endorsed by an analysis of a compendium of nineteen case studies described in Box 2.9.

Box 2.9: Compendium of Case Studies

A 'compendium of case studies' based on the outworking of various CRA methodologies by numerous organisations was analysed by the ProVention Consortium in collaboration with the Disaster Mitigation Programme for Sustainable Livelihoods (DiMP)[99] and Dr. Ben Wisner. It was launched in May 2006 as part of the 'Community Risk Assessment and Action Planning Project'. To date nineteen case studies have been analysed with guidance notes provided (ProVention Consortium, 2008). The methodology for analysis of these case studies included two important research questions that have bearing on the issue being addressed here. The two questions posed when analysing the CRA case studies[100] were:

> How has this practice of CRA influenced change in policy and practice at the local level?
> How has this practice of CRA influenced change in policy and practice at the national level?

Examining these case studies, which are themselves likely to be considered 'best practice' by those who wrote them (as failures and bad practice are not so likely to be documented in this way), reveals that there are just five examples where government officials were integrated into the process with a resultant marked influence on local and / or national level policy and practice (see Appendix O). These examples are in Zambia (ZRCS, 2003), El Salvador (Lavell, 2004), Cuba (Thompson et al., 2004), Lao PDR (Luangraz, 2005), and the Philippines (CDP, 2005). Appendix P and Appendix Q provide further details on two of these: the Philippines and El Salvador respectively.

On the occasion where government officials are engaged in a CRA and CBDRM process that identifies issues from a more holistic perspective[101] this is likely to be based on a

[98] Examples of countries where a linkage between top-down and bottom-up approaches is aiding the effectiveness of CBDRM are few. In Asia, Bangladesh, Vietnam and Cambodia are in the early stage of integrating CBDRM in policy and strategy (Shaw and Okazaki, 2003). Elsewhere, Cuba shows us a rare example of successfully building CBDM into a national risk reduction programme. Examining Cuba's experience, Oxfam America argues that strengthening community capacity, strong coordination of local actors and investing in social capital are determinate factors for successful risk reduction (Wisner, B. in Thompson and Gaviria, 2004, p.4). But these are the exceptions.

[99] The DiMP, at the University of Cape Town, won a 'Certificate of Merit' for 2007 in the annual UN Sasakawa Award for Disaster Reduction

[100] Several of which the author feels are more accurately described as CBDRM case studies, as they are not all based on an identifiable CRA approach

[101] For example, through participatory means with a focus on livelihoods and vulnerability reduction rather than hazard-control, and emphasising non-structural mitigation as well as structural

very special set of circumstances. In such circumstances, the organisation and individual(s) helping to facilitate the process is among the most significant of factors. This is probably true of the five case study examples listed in Box 2.9. Nevertheless even then the shift in mindset of government away from the 'dominant approach' towards a 'community-based' or 'political economy approach' is often limited to an acknowledgement in the benefits of the participation of local stakeholders (for example, Murwira et al., 2000).

Based on the limitation of examples where a CRA process has been expanded beyond local community boundaries, it is clear that much more work in this area is required. Using the words of the 'Discussion Paper' for the 'Social Vulnerability and Capacity Analysis Workshop' and supporting Buckle et al. (2003) and Buchanan-Smith and Christoplos (2004), "Further development work is needed to devise a [CRA] that identifies and measures the elements set out in the varied phases in the development of vulnerability or safety" (Davis et al., 2004). Even more succinctly, at the WCDR Dr Omar Cardona[102] said, "The causes of risk must be assessed." The 'Crunch (and Release) Model' lends itself as a useful starting point (see Chapter 3).

2.4 The Macro-Level Context of Disaster Risk Reduction

2.4.1 Introduction

This section highlights how disasters are a governance related issue, and as such governments have a fundamentally important role in creating an environment where DRR, including CBDRM, can occur and flourish. Therefore the 'Hyogo Framework for Action 2005 – 2015' (HFA) (UN/ISDR, 2005) on disaster reduction is a landmark document because of its endorsement by 168 governments. Relating to this thesis the HFA is analysed through the lens of its coverage of community-based approaches, risk assessment and the underlying causes of risk and vulnerability. And finally this section focuses on the Government of India's approach to this subject.

[102] Personal attendance at Dr Omar Cardona's (UN Sasakawa Award for Disaster Reduction Laureate 2004) presentation at the WCDR in Kobe, Japan, 18 – 22 January 2005

2.4.2 Good governance as a basis for government policy and practice on disaster risk reduction

The World Bank defines governance as "the manner in which power is exercised in the management of a country's economic and social resources for development."[103] And therefore, in relation to the underlying causes of vulnerability, disasters can be seen as a governance-related issue (for example, Government of India, 2002; UN/ISDR, 2005; ADPC, 2006). Dr Ben Wisner and Dr Peter Walker write, "Good governance leads to concern for the right to life with dignity; the basis of all disaster mitigation" (Wisner and Walker, 2005)[104] and Anshu Sharma from SEEDS India believes, "Participation through good governance is the first step towards mainstreaming DRR."[105] Indeed the 'Yokohama Strategy' (UN IDNDR, 1994) identified governance related issues as a specific gap in effective risk reduction.

The Overseas Development Institute (ODI) (2006) describe the six main 'arenas of governance'[106]. One of these, 'government', is given a particular level of significance as it is described as the "executive stewardship of the [governance] system as a whole." In relation to disasters, this supports Etkin and Davis' (2007) assertion that governments have a duty of care to protect and ensure the safety of citizens. Also, drawing on experiences in Cuba, Wisner drew up eleven "key features of good governance in risk reduction…all stemming from public authorities' fundamental political commitment to safeguard human life" (Thompson and Gaviria, 2004, pp.20-21). What is more governments are the most appropriate institutions since they have the necessary resources and capacity with the *potential* to undertake and direct large-scale multi-disciplinary

[103] The Governance group of the World Bank Institute: http://www.worldbank.org/wbi/governance
[104] A point made by the civil society representatives at the WCDR (Kobe, Japan, 18 – 22 January 2005) from the perspective that this acknowledgement was lacking in the draft HFA
[105] Personal attendance at presentation made on 'Mainstreaming Disaster Risk Management' at University College London, 21 April 2005
[106] The six 'arenas' of governance are civil society (where citizens raise and become aware of political issues), political society (where societal interests are aggregated), government, bureaucracy (where policies are implemented), economic society (referring to state-market relations), and judiciary (where disputes are settled). Court et al. (2004) also identify six core 'principles' of good governance: participation, fairness, decency, accountability, transparency and efficiency. The ODI (2006) paper combines these principles with the six arenas. This provides a useful framework for the analysis of disaster risk at a national level, as improvements regarding the principles within each of the arenas will benefit DRR.

initiatives necessary in disaster risk management, even if this is with the aid of donors. Governments also create the policy and legislative frameworks within which risk reduction can be enforced.

Decentralisation

Principles of good governance are more likely in a context where there is a decentralisation of government policy and practice on DRR away from a 'command and control' top-down structure. Indeed over recent years, many governments in developing countries have progressively decentralised a range of their responsibilities from national to local levels (Twigg, 2004, p.66). This was endorsed by the WCDR which stated that, "Both communities and local authorities should be empowered to manage and reduce disaster risk by having access to the necessary information, resources and authority to implement actions for disaster risk reduction."[107] For example, in the Philippines, Allen (2006) acknowledges how emphasis has shifted from the role of civil society organisations as "principal service providers and facilitators of local initiatives to a less autonomous role working in *partnership* with government" (Allen, 2006, p.83). And government decentralisation of power and resources was observed by Maskrey (1989, p.85) to correlate with, "The most exciting programmes…[because] the state supported and complemented CBO actions." The neo-liberal transition underway in many countries to a decentralized system was endorsed by the findings of the study by Court et al. (2004) in relation to the governance arena of 'civil society'[108]. They discovered that, "Space for civil society is increasingly open." This all appears to bode well for the sustainability and scale of CBDRM and participatory CRA.

Links with the local level are among the core elements enabling impressive national disaster management initiatives to function effectively. Considering Cuba[109] for example, it is through reliance upon local assets such as local leadership, community mobilisation,

[107] *Extract from the final report of the World Conference on Disaster Reduction* (A/CONF.206/6) (p.5)
[108] Court et al. (2004) compared sixteen developing countries (accounting for 51% of the world's population) and highlighted significant governance challenges and opportunities.
[109] Other examples include Bangladesh, Vietnam, and the Philippines

popular participation in planning, community implementation of lifeline structures, and the creating and building of localised social capital, that (through accumulation) the nation as a whole is better protected from disaster. Through these strengths demonstrated locally, Thompson and Gaviria (2004, p.54) feel Cuba offers rich lessons for work in risk reduction in other countries even in the absence of national political will or resources.

Despite these positive endorsements, there are potential downfalls in decentralisation.

For example, the ODI (2006) warns that regardless of the devolution of power to local governments, as a global generalisation, actual public input into policy remains quite limited. They suggest that, "People's views tend to be ignored or misrepresented" (ODI, 2006, p.3).

Twigg (2004, pp.66-69) raises the point that decentralisation may occur so as to enable, "central governments without financial resources [to] simply abdicate their responsibilities." In such circumstances it is highly unlikely that local governments are going to be well resourced themselves, regardless of being given any additional decision-making powers. In the case of the Philippines National Red Cross CBDP programming, lack of local government resources was considered to be the biggest constraint to productive relations between civil society and local government institutions, and hence to the realisation of CBDP goals (Allen, 2004). Integrated planning under such circumstances amounts to a 'wish list'. And even the $27 million 'Disaster Risk Management Programme' in India appears to be facing resource limitations. In the view of Dhar Chakrabati, although the "villagers have the option of using the Panchayat forum for mitigation…there are not sufficient resources."[110] Therefore the programme is limited to disaster preparedness activities at a local level. However when local governments with limited resources intervene in community initiatives Twigg (2004) points out that communities are not necessarily going to lower their expectations accordingly.

[110] Personal communication with Dhar Chakrabati (Executive Director, National Institute of Disaster Management), Delhi, 3 March 2006

Twigg (2004, pp.66-69) also focuses attention on what he refers to as "Another fundamental, but less visible, weakness of decentralisation." Decentralisation he suggests "puts responsibility for implementation on those who can only address local-level causes of vulnerability." This leaves deeper-rooted issues unaddressed through a series of fragmented small-scale initiatives. And these fragmented initiatives also generate obstacles of their own. Even prior to the shift in emphasis to the local level advocated by the 'High Powered Committee on Disaster Management' in India, poor coordination between NGOs operating at the grass-roots level and government authorities was identified as being weak (Government of India, 2002, p.130; Twigg, 2004, pp.69-70)[111]. Indeed even coordination between NGOs themselves, and among the large number of government agencies with a legitimate role to play in disaster management, is often poor (Twigg, 2004, p.64). And yet multi-stakeholder partnership is crucial for sustainable CBDRM, which is a step even more challenging than coordination alone.

And finally, another way that decentralisation can go dramatically wrong is that nominally democratic institutions at a local level can be 'captured' by local elites who use them for personal gain (Wisner and Walker, 2005, p.69). These problems have led some observers to write of the need for more than decentralisation, but 'democratic decentralisation' (Ribot and Larson, 2005).

2.4.3 The Hyogo Framework for Action 2005-2015

At the 'World Conference on Disaster Reduction'[112] held in Kobe, Hyogo, Japan, 18 - 22 January 2005, 168 governments around the world committed to take action to reduce disaster risk. Through the 'Hyogo Declaration' they adopted the 'Hyogo Framework for Action 2005 – 2015' (HFA) (UN/ISDR, 2005) as the guideline to achieve this. The HFA

[111] An effort was made by the 'High Powered Committee on Disaster Management' to address this by organising a nationwide network of NGOs, Voluntary Agencies for Sustainable Universal Development and Emergency Voluntary Action (VASUDEVA)

[112] See report on Thematic Session 1.4 'Turning Practice into Policy: supporting community risk reduction through government and institutional policy' for details of the author's contribution with Tearfund http://www.unisdr.org/wcdr/thematic-sessions/cluster1.htm#c1-4

is therefore currently the most important DRR related document[113]. Box 2.10 highlights the core components of this framework.

Box 2.10: The Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters

Expected outcome

The substantial reduction of disaster losses, in lives and in the social, economic and environmental assets of communities and countries.

Strategic goals

1. The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.
2. The development and strengthening of institutions, mechanisms and capacities at all levels, *in particular at the community level*, that can systematically contribute to building resilience to hazards.
3. The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.

Priorities for action[114]

1. Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.
2. *Identify, assess and monitor disaster risks* and enhance early warning.
3. Use knowledge, innovation and education to build a culture of safety and resilience at all levels;
4. *Reduce the underlying risk factors*.
5. Strengthen disaster preparedness for effective response at all levels.

Source: UN/ISDR (2005), with author's use of italics for emphasis highlighting the links with this thesis as discussed below

[113] However this high-level document and those directly involved in its development are often likely to be far removed from the grass-roots level. Indeed the national government level negotiations need to have greater influence upon lower tiers. For example, the Secretary of Disaster Management for the State of Bihar responded to the author's question about the HFA (of which he was unaware) with the words, "We need practical plans, not jargon." (Personal communication, Patna, 1 March 2006, over a year after the Government of India made a commitment to the 'Hyogo Declaration').

[114] "[The HFA] priorities are also linked", according to IFRC (2006a, p.11), "to four cross-cutting issues that are clearly assisted by the VCA approach (in fact, it is difficult to imagine that they could be achieved without the type of grass-roots approach of VCA and similar tools): Multi-hazard approach, Gender perspective and cultural diversity, Community and volunteer participation, Capacity building and technology transfer."

Former President Bill Clinton[115] endorsed this blueprint for DRR with the words,

> "The Hyogo Framework for Action provides concrete guidelines for reducing the effects of disaster over the next decade…If implemented, these measures will reduce the economic and social impacts of disasters, including the number of people killed and affected every year by natural hazards. That is why it is important that governments implement these measures, and do so quickly" (UN/ISDR, 2005).

Despite this ratification, a key frustration voiced by civil society participants at the WCDR was associated with this word 'guidelines'. It was positive that national governments, acknowledged to have primary responsibility for sustainable development and for taking effective measures to reduce disaster risk[116], declared through the 'Hyogo Declaration' that they adopted the HFA. But this was with the words, "as a *guiding* framework for the next decade on disaster reduction."[117] Measurable time-bound targets were not included. That said the first years following the 'Declaration' have demonstrated that several individual States, and other actors such as donor institutions (Tearfund and UN/ISDR, 2007), are showing new levels of commitment to making progress in DRR.

The following sections provide a brief consideration of the explicit links between this thesis and the HFA.

Hyogo Framework for Action Strategic Goal No.2

By its inclusion within a strategic goal the HFA has now accelerated the 'community based approach' agenda among governments by endorsing this perspective. And because of its recognition as a goal, a community focus can be seen to influence priorities for

[115] United Nations Special Envoy for Tsunami Recovery
[116] *Report of the World Conference on Disaster Reduction* (A/CONF.206/6) (p.4)
[117] Extract from the *Report of the World Conference on Disaster Reduction* (A/CONF.206/6) (p.4, para 5) with the author's use of italics for emphasis.

action. For example a Key Activity of the HFA Priority for Action No.1 is to:

> "Recognise the importance and specificity of local risk patterns and trends; decentralize responsibilities and resources for disaster risk reduction to relevant sub-national or local authorities, as appropriate" (UN/ISDR, 2005, p.6).

This is a significant progression from the previous Yokohama conference in 1994[118], which is being capitalised on in the disaster management community. For instance Margareta Wahlström[119] recently reiterated the emphasis on the need to ensure that communities are included in DRR decision-making and implementation with the statement, "Local communities are the essential cornerstone in our effort to make the Hyogo Framework for Action a practical tool for saving lives and livelihoods" (UN/ISDR and UNDP, 2007 foreword).

Therefore CBDRM and CRA should receive increased recognition by governments as well as by non-government organisations. Certainly the subjects have been growing rapidly in recent years.

Hyogo Framework for Action Priority for Action No.2: Identify, assess and monitor disaster risks…[120]

While it is positive that the HFA recognises the importance in identifying and assessing disaster risks, in the opinion of Wisner and Walker (2005, p.47), "The tone throughout this section is very much a top down one. The emphasis is on the expert creation of knowledge. No mention is made of the importance of community knowledge and or understanding community perceptions of risk and disaster. This is more than regrettable, since all the research…is clear that without full community acceptance and participation, such science lead ventures are doomed to failure." Also, Dr John Twigg (2006) in his early scoping work for the DFID DRR Interagency Working Group explored the

[118] Personal communication with Professor Ian Davis (2006)
[119] UN Assistant Secretary-General, Deputy Emergency Relief Coordinator
[120] …and enhance early warning

connection between the HFA and 'characteristics of a disaster resilient community'. This led him to the conclusion that the HFA included, "significant gaps in coverage, particularly around risk assessment and disaster preparedness." Of particular interest is his view that, "the HFA does not distinguish between unsafe conditions and their underlying causes".[121] There is thus a fear that the 'community based approach' mentioned earlier is unsubstantiated, at least in relation to risk assessment.

To counteract this perceived weakness, it has been argued that CRA needs to be promoted as a complementary component of the HFA. For example, IFRC (2006a, p.10) suggest that, "VCA and similar methods used by non-governmental organisations can provide the grass-roots foundations for making the [Hyogo] framework successful."

Hyogo Framework for Action Priority for Action No.4: Reduce the underlying risk factors

The HFA states that, "Disaster risks related to changing social, economic, environmental conditions and land use, and the impact of hazards associated with geological events, weather, water, climate variability and climate change, are addressed in sector development planning and programmes as well as in post-disaster situations" (UN/ISDR, 2005, para 19).

To reduce the underlying risk factors then, under Priority for Action No.4, the key activities recommended by the HFA include the encouragement of the mainstreaming of DRR within environmental and natural resource management, social and economic development, land-use planning and other technical measures. While this is necessary, it is a perspective on the underlying causes of risk and vulnerability that avoids exposing the reasons why the political will to undertake DRR is generally insufficient and ineffective. The HFA instead appears to dwell on an assumption that the underlying risk factors are present solely on account of a lack of knowledge and awareness. Wisner and

[121] "Although", Twigg (2006) goes on to say, "it comprises elements that may be placed in these different categories."

Walker (2005) also expressed this opinion based on their consideration of the 'Thematic cluster' panels held on this HFA Priority for Action at the WCDR. They say, "Very few speakers addressed what we consider to be 'root causes' of disaster vulnerability. What other meaning can one attach to the phrase 'underlying risk factors'? Dimensions of poverty such as exclusion, informality, and marginality were not mentioned. Economic and political power was absent. The panel were perhaps too polite to use terms such as 'exploitation', 'oppression', and 'corruption'. Instead, the themes addressed were, by comparison, secondary and technical" (Wisner and Walker, 2005, p.23).

So while the HFA is a welcome development and, despite civil society apprehensions, appears through its guidance on disaster reduction to be leading towards country-level actions, question marks are present regarding its weak and lack of explicit calls for approaches that will lead to sustainable CBDRM on a scale befitting the need.

2.4.4 Government of India policy and practice on disaster risk reduction

This section focuses on the Government of India's policy and practice on DRR by briefly explaining some important aspects of the context within which DRR and CBDRM seeks to make progress. This picks up on the macro-level issues already described (governance, decentralisation and the 'Hyogo Declaration' – of which the Government of India is a signatory) and also includes a discussion regarding developmental ideologies in this country.

Developmental ideologies

The approach to disaster management in India has been shaped by the context of opposing development ideologies.

"Ever since the beginning of what might be called the 'development era' in the post World War II period, tensions have existed between macro-perspectives and those emerging from the complex realities that shape local contexts. In India the world-views

of Nehru[122] and Gandhi, mythologies of centralised socialist development versus village, community and tradition, represented competing narratives for the future" (Moench and Dixit, 2007, p.97).

Moench et al. suggest that in India, "Initially most development was conceptualised primarily as a process of modernisations – of delivering the knowledge, technologies and systems to local communities so that they could abandon the 'backward', traditional practices seen as hindering modern ' developed' ways of working. Support services, the dams and irrigation systems that Nehru…famously called the 'Temples of modern India', were built to support the new modern agriculture" (Moench et al., 2007, p.97). But then the pendulum swung back, away from centralised decision-making towards locally owned and community driven development[123]. This pendulum swing did not happen rapidly though. In the words of the Panchayat Pradhan (Mukhiya)[124], "Between 1952 and 2001 there were no elections of Mukhiya's. The Block Development Officer (BDO) controlled everything. However, the decentralisation process that Ghandi advocated eventually took shape after 50 years with the re-establishment of a local governance structure." These are known as the Panchayati Raj Institutions[125].

However, the emergence of locally driven strategies and forms of organisation has not replaced centrally driven ones. For example, the Ministry of Water is currently developing a huge infrastructure programme to link all rivers in the sub-continent.

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[122] India's first Prime Minister

[123] In 1994 the Ministry of Rural Development of the Government of India produced a set of people-centred guidelines for implementing its watershed programmes. "It incorporated good practice from NGO and government policy, such as awareness raising, bottom-up planning, partnerships with NGOs, and community participation" (DFID 1999-2001 Guidance Sheet 7.4).

[124] Personal communication with Mohammed Safdar Imam (alias Saheb), Panchayat Pradan for Ojhaul Panchayat, Dharbanga District, Bihar, 27 February 2006. (The people elect a Mukhiya, who relates to the Block Development Officer (BDO) – the lowest government appointed official. It is an unpaid position and therefore corruption is likely to be a significant issue. Ward Members are also elected by local people to be their representatives to the Mukhiya.)

[125] "The 73rd and 74th constitutional amendments recognise Panchayati Raj Institutions ['people's representatives'] as 'Institutions of self-government'. The amendment has also laid down necessary guidelines for the structure of their composition, powers, functions, devolution of finances, regular holding of elections and reservation of seats for weaker sections including women" (Government of India, 2005a p.70). A Panchayat accounts for 12-13 villages or approximately 20,000 people.

Therefore an acknowledgement of both ideologies is still needed. The adopted approaches to development can be argued to still be "as much driven by conflicting visions of what life *should* be, what the state *should* do, and who *should* drive development as it is about what works" (Moench et al., 2007, p.98)[126]. There is a danger that this perspective can be overlooked, perhaps particularly by single-minded NGOs advocating for the adoption by government authorities of 'proven good / best community-based practices'.

Governance

As has already been noted, disasters can be thought of as a governance issue. Within the Indian context, amongst the findings of the study by Court et al. (2004), corruption was identified as the number one governance problem. Indeed a governance expert in India was quoted as saying, "Right from birth to death nothing happens without bribery and corruption" (ODI, 2006, p.3). The study also identified ratings for various specific governance issues in India (see Table 2.1). The lowest rating can be seen to be for 'civil society input into policy': a key area of interest in this thesis. To attempt to overcome this barrier, an Indian NGO[127] in Orissa has been scaling up its programmes by clustering new projects around villages that have already implemented projects. "The aim is to create a 'critical mass' of practice sufficient to influence both governmental and aid agency policy" (IFRC, 2004, p.31).

[126] Author's use of italics for emphasis

[127] Gram Vikas (a rural development organisation, working with poor and marginalized communities of Orissa since 1979): "Community mobilisation processes are effected in clusters…with a view to form federations of the villages at the Panchayat level. These villages with basic levels of development, high levels of participation of men and women in the community, and strong management capacities, are able to influence democratic processes at the Panchayat level and ensure effective conduct of development projects." (www.gramvikas.org)

Table 2.1: Governance Assessments – Selected Indicators for India, 2000

Indicator	Rating
Freedom of expression	4.11
Civil society input in policy making	*2.61*
Legislature representative of society	2.83
Legislators accountable to public	2.56
Military subordinated to civilian government	4.67
Civil servants accountable	2.92
Government's respect property rights	3.21
Regulations equally applied	3.18
Equal access to justice for all citizens	2.86
Judicial officers held accountable	2.92
The higher the rating (on a scale of 1-5), the better governance is perceived by a group of experts from across the governance realm.	

Source: Adapted from ODI (2006) with author's use of italics for emphasis

Disaster management

Development ideologies and governance thus provide the broad context within India in which DRR has gained increasing recognition over the last decade. Largely this has been on account of several disaster events and their significant impact upon the country, the economy and local communities. Some recent examples include the Orissa cyclone (1999), Gujarat earthquake (2001), Indian Ocean tsunami (2004), Maharashtra (Mumbai) floods (2005), widespread droughts, and annual flooding in the Northern / North-Eastern States. Among a myriad of statistics that could be referenced, comments made by Andrew Maskrey at the WCDR[128] emphasise the current status of disasters within the country. Supporting a global research project undertaken by UNDP[129], he stated that India was number two in terms of international relief costs[130] and number one in terms of

[128] Personal attendance at presentation by Andrew Maskrey
[129] The 'Disaster Risk Index' (UNDP, 2004)
[130] This is despite the fact that, "as a policy no requests for assistance or appeals are made to the international community in the event of a disaster, [but] assistance offered suo moto is accepted"

emergency loans. However in a widely acknowledged view, here expressed by Anderson[131], India has made some major inroads in dealing with drought and famine, which was formerly responsible for the deaths of very many people[132]. Post the 1970s and 1980s the substantial progress made in dealing with this problem has been attributed to increased irrigation, improved reservoir management and food security measures (Government of India, 2002). Indeed, not wishing to be perceived as a developing country absorbed with managing its own disasters, India gave $5 million to the American Red Cross for the New Orleans floods following Hurricane Katrina and also money to Afghanistan, Iran and Indonesia[133].

The High Powered Committee on Disaster Management (1999-2001)

Although arguable, progress towards an improved acknowledgment and practice in DRR has also been attributed to political processes and strong leadership, and not only a sense that 'something must be done' in the wake of disaster. For example, the 'High Powered Committee (HPC) on Disaster Management' (Government of India, 2002) was set up in 1999[134] at the end of the IDNDR to investigate the institutional mechanisms and arrangements required for effective disaster management. This happened *before* the Orissa cyclone, and according to Dhar Chakrabati[135], was considered instrumental in the paradigm shift from relief to disaster management.

The HPC emphasised the importance of a holistic perspective to disaster that encompasses preparedness and mitigation as well as response (all operating within a culture of prevention). It was argued that this approach had to be integrated within development processes in order for these to be sustainable. An example of an initiative by

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(Government of India, 2005a, p.71). (China is number one for international relief costs)

[131] Personal communication with Mary Anderson, Cambridge, Massachusetts, 27 June 2006

[132] According to EM-DAT, in 1942 1.5 million died and again the same number in 1965

[133] Interview held by Sarah Dellor (Tearfund) with Mr N. M. Prusty. Chairman of SPHERE India, Delhi, 2 March 2006

[134] With members drawn from Ministries, States, NGOs and experts in relevant fields. The HPC carried out a nationwide NGO consultation in which more than 600 NGOs participated.

[135] Personal communication with Dhar Chakrabati (Executive Director, National Institute of Disaster Management), Delhi, 3 March 2006

the Government of India (in partnership with UNDP) that sought to act upon the change in paradigm is the 'Disaster Risk Management Programme' (see Box 2.11).

Box 2.11: Government of India - UNDP Disaster Risk Management Programme (Part 2)

This government initiative came post the Gujarat and Orissa disasters in recognition that, unlike drought and famine that had been better dealt with in the past, other types of natural hazard were having an increasingly significant impact on the country. The Bangladesh model was instrumental in the design of the 'Disaster Risk Management Programme' (DRMP), as were some of the examples from the Philippines[136].

The programme covers the 169 most hazard-prone Districts in seventeen States (including Bihar[137]) at a cost of $27 million, with an intention that ultimately this will be expanded to cover all the Districts of India[138]. Among the plethora of statistics that have been used by programme officials to demonstrate impact (which could be said to over-emphasise scale and quantity, over quality) two are highlighted here: over 8,000 elected representatives of Panchayati Raj Institutions and 20,000 government officials had been trained by 2005 (Government of India, 2005a). These demonstrate that the focus of the programme is on strengthening community-based work (in the form of disaster preparedness) and on building capacity of local governments: certainly critical needs.

One focus of concern in disaster risk management that the programme aimed to tackle, and is also a focus of this thesis, however was sustainability. For example the Government of India (2005a) explains in their report to the WCDR that through the DRMP, "The Disaster Management Committees and Disaster Management Teams [at a local level] have been established by notifications issued by the State Governments which will ensure that the entire system is institutionalized and does not disintegrate after the conclusion of the programme." Although the evaluation of the programme has been recently undertaken[139], its critical findings have prevented the results from being shared publicly at this point in time. However during the time of the evaluation itself Dhar Chakrabati suggested that the greatest challenges facing the programme were likely to be, "The integration with the normal functioning of administration at the local level (Panchayat and District), and linking the work with the poverty alleviation programmes."[140] He

[136] Personal communication with Dhar Chakrabati (Executive Director, National Institute of Disaster Management) Delhi, 3 March 2006

[137] Although, in the opinion of Dhar Chakrabati (NIDM), due to poor governance the programme in Bihar is likely to have been of low effectiveness, particularly in comparison with Gujarat and Orissa (personal communication, Delhi, 3 March 2006)

[138] Numbering about 600 in total

[139] Led by Ken Westgate, Regional Disaster Risk Reduction Advisor, UNDP, Nairobi

[140] Personal communication with Dhar Chakrabati (Executive Director, National Institute of Disaster Management) Delhi, 3 March 2006

explained that this was because, "currently the DRMP is being implemented as a stand alone initiative." This has consequential affects in terms of sustainability.

Among the recommendations of the HPC that would support a holistic approach to disaster management was the enactment of suitable legislation by the Central as well as the State Governments.

The Disaster Management Act 2005

The Disaster Management Act[141] (Government of India, 2005b) set up disaster management authorities[142] at the national, state and district levels, involving multiple disciplines and sectors at each level and empowered these authorities with various functions and powers. The 'National Disaster Management Authority' (NDMA)[143] is headed by the Prime Minister and has nine members. These members are developing various policies, guidelines, modules and standards for holistic management of various kinds of natural and human-induced disasters (UN/ISDR, 2007, p.26). However strength in this piece of legislation lies in its emphasis, following the recommendations of the HPC, on the local levels. In particular the Panchayati Raj Institutions are considered to be effective instruments in tackling disasters due to their proximity to communities (Government of India, 2002). So, while State Governments are given primary responsibility in disaster management (modelled on the successes of the Gujarat and Orissa State Disaster Management Authorities), and the District Level (through the 'Collector') is key for implementation, the Panchayati Raj Institutions are recognised as important in representing the local people themselves within the system. By contrast, Central Government is only seen as having a support function when necessary. While decentralisation is recognised as being supportive of CBDRM, there are other perspectives that need to be acknowledged (see Chapter 2.4.2).

[141] Hereafter referred to as the Act
[142] The HPC had recommended that a Ministry of Disaster Management be formed
[143] Formed in September 2005 under a special ordinance prior to the enactment of the Act itself

Further important elements of the Act include the creation of the 'National Institute of Disaster Management' (NIDM), which has responsibility for training and capacity building on disaster management. Additionally, besides disaster response funds, the Act set up disaster mitigation funds at the three levels of government. This is a significant achievement, as DRR commonly has too low a priority for this to occur (Twigg, 2004, pp.69-70). However, UN/ISDR (2007, p.31) explains that the, "Political commitment for such resource allocation has emerged out of the lessons learnt from repeated disasters." Further details regarding the content of the Act can be found in Appendix R.

Government of India institutional and policy framework for disasters

While the 'new institutional mechanisms' have been initiated (post the Act in 2005), in many respects the original institutional policy and framework is still evident. A transition is underway. Therefore Appendix S includes details on both the earlier and the new mechanisms for handling disasters within the Government of India.

2.5 Conclusion

This chapter on the state of knowledge has explained that in recent years the 'community-based approach' to disaster risk management has been growing, as emphasis on the causes of disaster shift from a hazard focus to a realisation of the significance of vulnerability. This has also connected disaster risk management more closely with development goals and aspirations and developmental shortcomings that ignore or contribute to the generation of risk. But despite its relevance, the basis for vulnerability reduction is not preoccupied with weaknesses but based upon the strengthening of vulnerability's antithesis, capacity. This has challenged the 'dominant approach' to disaster risk management, which is hazard-focused and as such is devoid of an acknowledgement of the complex social, economic, political and environmental aspects of disaster risk. However the 'dominant approach', possibly on account of a lack of knowledge and awareness regarding DRR but also because of its separation from the politicised nature of the more recent paradigm, is still very common. This is particularly so at local levels of government, even when national policies, authorities and legislation

exist. Despite recent strong progress and endorsements at the international and national level, CBDRM is still predominantly an NGO and CBO strategy on the ground.

The chapter has also identified that CBDRM has its own difficulties. Despite improvements, CBDRM still struggles with sustainability and, when an NGO and CBO strategy, a lack of scale. It can be highly isolated and far removed from the macro-level causes of risk. However, so long as it is facilitated strongly so as to overcome criticisms that it can be little more than a data collection exercise for external organisations, CRA can aid CBDRM. Indeed it can be considered an essential prerequisite. This is because CRA should be based on the meaningful participation of local groups, should emphasise capacities as well as vulnerabilities, and should be linked with action planning. Thus diagnosis informs actions, assisting sustainability. CRA can also form the basis of an expansion of CBDRM beyond local community boundaries by identifying the underlying causes of vulnerability from a local perspective and engaging different stakeholders, including local government, in this analysis. However there is a lack of methodologies that aid the facilitation of such a complex and demanding process.

Finally, the chapter expanded its focus to consider the macro-level context of DRR. The HFA indicates a renewed drive by governments to position the community-based agenda as a central theme of effective DRR. Good governance and decentralisation are core concepts that will aid this. But there are numerous weaknesses when translating rhetoric into action. This has significant implications, as governments are the primary stakeholders in DRR. Further work is therefore required to blend top-down and bottom-up approaches to disaster risk management.

3 METHODOLOGY

3.1 Introduction

The State of Knowledge chapter documented key principles of disaster risk management and critical components of CRA. It also demonstrated that, with a very small number of exceptions among the disaster community, there is a demonstrable lack of understanding on an international scale regarding:

1. Methods of assessing the underlying causes of vulnerability.
2. The link between CRA and CBDRM.
3. Methods of enhancing the sustainability and scale of CBDRM.

Further investigation to address these gaps in knowledge is needed, and hence these three points form the research objectives of this thesis (see Chapter 1).

This chapter describes the methodology employed to investigate these three research objectives, and is structured as follows:

Section 2: Theoretical Basis for Research Approach. A brief overview of the theoretical basis for the research approach as discussed in relevant literature, with a particular focus on the use of Action Research as a methodological approach.
Section 3: Progression of Research. Defines the evolution, or progression, of the research undertaken.
Section 4: Methodological Approach. A detailed account of the methodological approach to the work.
Section 5: Conclusion. Highlights key issues arising from the researcher's experience.

3.2 Theoretical Basis for Research Approach

3.2.1 Qualitative versus quantitative research

Research is often broadly described in terms of quantitative versus qualitative approaches. Whereas quantitative research tends to be associated with numbers, analysis, large-scale studies, a specific focus, researcher detachment, and a pre-determined research design (Denscombe, 1998, pp.174-6), qualitative research was considered better suited to the type of investigation required for the circumstances and aims of this research agenda. The depth of understanding that is necessary in order to illuminate useful theory on effective DRR requires an appreciation of non-definitive and non-numeric influences. These are connected with context, culture, history, power relations (both evident and hidden) and other similarly elusive and dynamic subjects that can be interpreted from different perspectives and in many different ways.

Qualitative approaches, however, can use a wide range of tools to gather and organise information in various manners. This approach therefore challenges the researcher to ensure that the methodologies adopted are clear and appropriate, and the analyses and consequential conclusions are robust. Or, as Bassey (1999, p.38) insists, a "systematic, critical, and self-critical enquiry, which aims to contribute to the advancement of knowledge and wisdom" is required.

3.2.2 Action research

Within this context, 'Action Research' (AR) was identified as the most appropriate methodological approach for this investigation.

Theoretical basis for action research

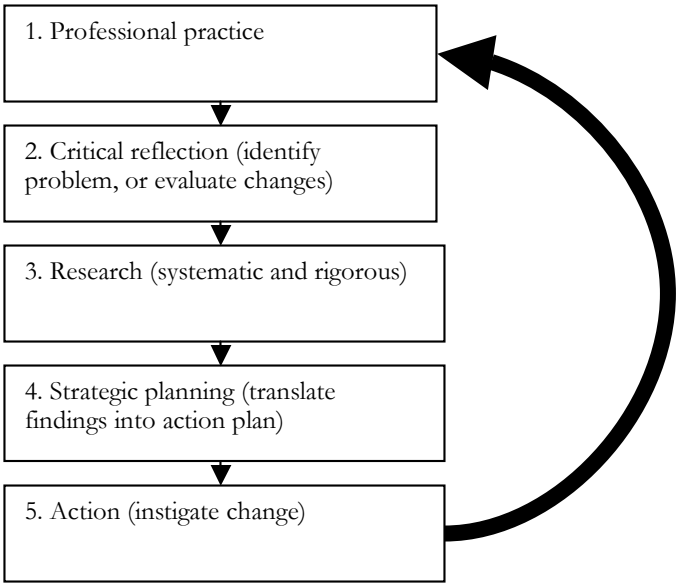
Kurt Lewin[144], who first coined the term 'action research' in about 1944 while a professor at the Massachusetts Institute of Technology (MIT), is credited around this same time with the phrase, "If you want truly to understand something, try to change it". AR

[144] One of the modern pioneers of social, organisational, and applied psychology (1890 – 1947)

challenges conventional social science by encouraging the researcher to come in from a distance as an observer, so as to open up opportunities to influence and be a part of change.

The model by Denscombe (1998, p.60) below (see Figure 3.1) is a good representation of the predominant pattern of research undertaken as part of an AR approach. Professional practice is used as the starting point of any investigation, and the whole process is used to effect change.

Figure 3.1: Denscombe's Model of Action Research



Source: Denscombe (1998, p.60)

AR is often characterised as an 'interpretive approach'. As such, complexity is recognised and analysed in "rich and individualistic" ways (Rubin et al., 1995, p.11). By engaging and predominantly becoming immersed in the diverse research process, as opposed to maintaining objective 'scientific distance' (as with more quantitative approaches, and even other forms of qualitative research), the researcher becomes an active participant in the research agenda.

Action research as the methodological basis for this research

The research for this thesis was undertaken in the context of the researcher simultaneously working as a practitioner. The researcher was working for Tearfund; one of the leading UK based NGOs on DRR (see Appendix T), and through this 'professional practice' identified and undertook research, both with Tearfund and independently, to address the research objectives.

AR has been defined in ways that clearly resonate with the researcher's blend of practitioner and academic. For example:

- Action research is a process of systematic reflection, enquiry and action carried out by individuals about their own professional practice (Frost, 2002, p.25).
- Action research is a term used to describe professionals studying their own practice in order to improve it (GTCW, 2002a, p.15).
- Action research combines a substantive act with a research procedure; it is action disciplined by enquiry, a personal attempt at understanding while engaged in a process of improvement and reform (Hopkins, 2002, p.42).

Further, investigation into vulnerability in the context of DRR requires an approach that enables and empowers local groups, rather than extracts information from them (see Chapter 2.3.3). Likewise AR can be described as a research activity with a "social change agenda" (Greenwood and Levin, 1998, p.4).

Therefore, rather than develop "theory-driven" research (Dick, 2000) on the lives of people affected by vulnerability or with influence over it, AR enabled these groups to engage in the process of finding ways to improve their own understanding and their own circumstances. This meant suitable weight in relevance of experience was given to those members of societies that are normally treated in disasters as helpless, or victims, and with little ability to offer credible and robust insight. In fact testing of theory in practical ways unlocks information that is only truly found amongst those that it affects (Carr and Kemmis, 1985; Schwandt, 1997). Similarly, research partners were given credibility as

worthy contributors to the research process. In the words of Greenwood and Levin (1998, p.126), "This is not good news [for conventional social scientists]", who would prefer their theories to avoid having "to meet the test of analysis in which local knowledge and action play a definitive role". The empathy then between the aims of vulnerability reduction agendas and AR reinforces the appropriateness of this adopted research method.

Adopting an AR approach is not a neutral position, and consequently complexity is increased (see Chapter 3.2.3). However it was considered that findings would stand a stronger chance of enabling knowledge to be advanced because they would be based on a depth of understanding, a "thick description" (Geertz, 1973), which cannot be adequately gleaned *solely* from the responses to a uniform survey questionnaire for instance[145].

Participation, reflection and action as a component of action research

AR describes a process, and hence is not prescriptive about the specific tools used in that process, but rather encourages the use of participatory methods. 'Participation, Reflection and Action' or 'Participatory Rural Appraisal' techniques, referred to as PRA, as well as 'Rapid Rural Appraisal' (RRA) techniques, were frequently used in the fieldwork. Consequently an appreciation of the links between PRA (and by default RRA) and AR is required.

AR holds similar characteristics to true PRA. As was described in Chapter 2.3.3, they both stress local knowledge, empowerment, and the development of sustainable initiatives for local self-management. And the skills of an AR researcher bear resemblance to those required of a PRA facilitator: an understanding of group processes; and a combination of ability with political and ethical commitment to the aims of the process (Greenwood and Levin, 1998, p.207).

[145] Survey questions may be interpreted in unexpected and different ways by respondents, and are inflexible to the interviewees preferred language, terminology and particular interests.

Unfortunately despite the much-needed introduction of PRA as a means to support development activities, much criticism has been generated regarding its use (and other related participatory assessment, appraisal and learning techniques) (Dudley, 1993; Cannon, 2001; IFRC, 2004; Twigg, 2005). It is not uncommon for PRA to be implemented insincerely and ineffectively as a ritual to indicate and claim that a process has fully involved local stakeholders (Greenwood and Levin, 1998, pp. 248-249). Likewise, Reason (1994) advocates for an AR framework that insists on "a participatory world view to match a participatory methodology." In other words, rhetoric is not sufficient to produce the kind of work desired. So while PRA techniques were used to contribute to the overall AR process, special care was required to avoid or minimise misuse.

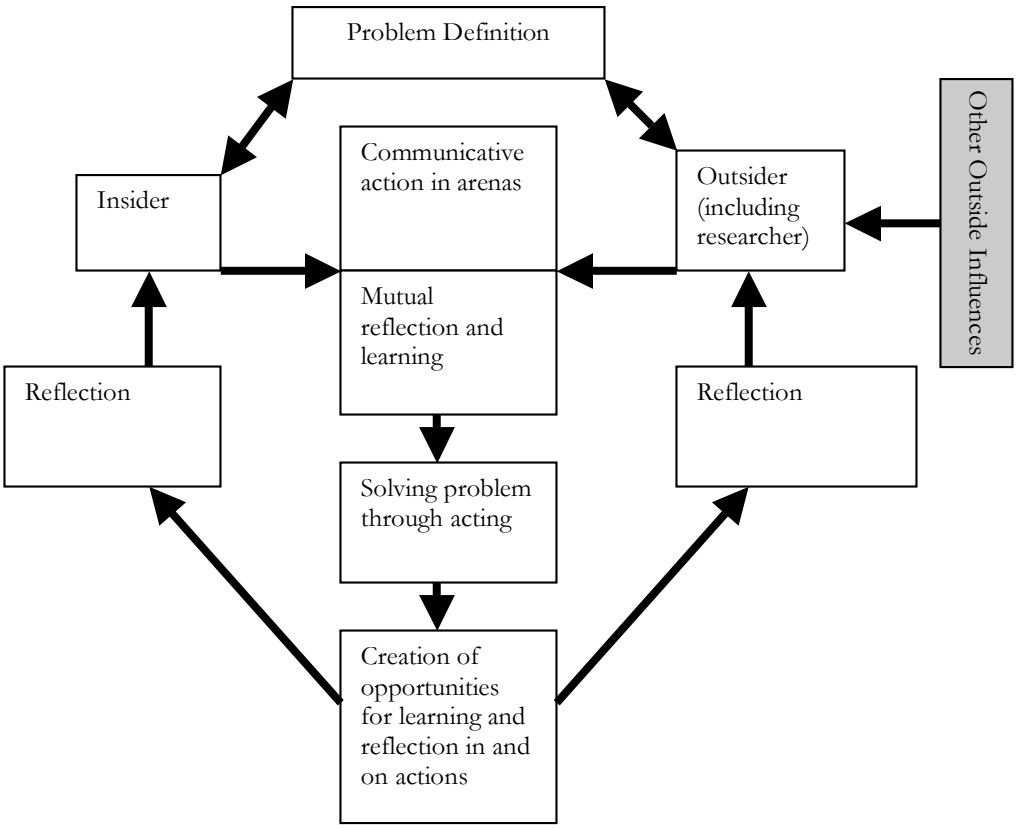
One critical area where the methodological approach adopted counteracted criticism of some PRA practice was in the area of action planning. According to Greenwood and Levin (1998, p.250) the action plans to be deployed as a result of a flurry of PRA techniques are not clearly articulated. PRA is often an end in itself. Just as this is unacceptable for a PRA process, so too is it unacceptable for AR. AR is long-term and determinedly seeks change. As such the ethos behind PRA and AR mirrors a central field of investigation of this research, namely the encouragement of the connection between CRA and action planning (see Chapter 2.3.4). Further, distinct components of this research have resulted in the publication of resources, designed for use by NGOs in the long-term (see Chapter 3.5.2).

Another area of potential weakness identified regarding PRA is with regard to its handling of power relations. Mosse (1993) shows how PRA can unintentionally structure local knowledge to reflect existing social relationships. However, as one of the research objectives of this thesis is concerned with addressing the underlying causes of people's vulnerability, the methodological approach purposefully seeks an understanding of power relations and is thus less likely to fall into this trap.

The use of semi-structured interviews and questionnaires

This participatory AR approach was supplemented by reflections and insights from key individuals, through semi-structured interviews and questionnaires. The inclusion of these insights is viewed as an additional influence in the AR process, as illustrated by the diagram on the next page. The diagram is an adaptation of the 'Cogenerative Action Research Model' (Greenwood and Levin, 1998, p.116). The addition is the extra influence of 'outsiders' on the right, indicating that some outsiders (including the researcher) are part of the AR environment, but other outsiders have some influence that is filtered by the researcher. In reality it is felt that all AR will in truth be influenced by outside elements in this way. In a deviation then from 'pure' AR, here the influence was recognised, and actually encouraged. This in itself is also consistent with DRR, which involves multi-stakeholder partnerships. It is not possible to meaningfully investigate DRR without including a wide array of perspectives.

Figure 3.2: The Cogenerative Action Research Model



Source: Adapted from Greenwood and Levin (1998, p.116)

Interviews need depth, detail, vividness and nuance (Rubin and Rubin, 1995). Therefore an understanding of the cultural context is always necessary, even when the subject of research is narrowly and clearly defined. Therefore while Rubin and Rubin (1995) suggest that there are two types of interviewing, 'cultural' and 'topical', it was felt that in practice these are entwined. Or rather, a topical interview is influenced by its cultural context.

Research on DRR is clearly topical. It is a focus that was determined by the researcher, even though stemming from working alongside disaster-affected communities. But

cultural norms play a highly significant role in our understanding of the influences that can cause people to be vulnerable and the different perspectives on vulnerability and risk that people have. So wherever possible, and to the best of the researchers ability, the influence of the cultural dynamic between the interviewer and the interviewee was considered. This issue is expanded in Appendix U.

How were interviews undertaken?

Considerable background work is required to prepare for topical interviews so as to explore what, when, how and why something happened (Rubin and Rubin, 1995, p.196). Familiarisation with literature and regular networking in DRR forums aided the productivity of the interviews. However, even when pre-determined subjects for discussion were identified (through the use of questionnaires or meeting agendas sent in advance of an interview), flexibility within the interview avoided the conversation drifting away from the interpretative approach towards the positivist.

Balancing a flexible interview style with a pre-determined agenda is not easy. However Rubin and Rubin (1995, pp.128-139) provide a list of stages of an interview that helped achieve this and best explain the researcher's interview style:

1. Create a natural environment: based upon a sense of empathy and understanding of the interviewees situation.
2. Encourage conversational competence: indicating that interviewees have something worthwhile to contribute[146].
3. Show understanding.
4. Get facts and basic descriptions.
5. Ask more difficult questions: people are rarely asked to reflect in depth on a subject.
6. Tone down the emotional level: for example asking if the interviewee has any questions or if anything has been missed that should be discussed.

[146] Wherever possible the interaction is a natural and two-way 'conversation', rather than an inflexible 'interview'.

7. Close while maintaining contact: perhaps with an offer of a follow-up meeting or a telephone conversation[147].

Predominantly within stages 4 and 5 different types of question were used to elicit information. 'Main questions' were used (captured on the interview guidelines) to help prevent the conversation from losing a sense of direction. But then 'probes' were required for clarification, and 'follow-up questions' to seek the necessary depth and pursue important themes.

Spradley (1979) provides some useful techniques to help frame questions. For example, asking questions such as, "How would you refer to…?", and 'coverage' questions that seek to establish the perimeters of the topic. These techniques were used.

It was important to be aware that there are different ways that people respond to questions to explain their position, perspective or feelings. So care was required to ensure that the interview process was not too restrictive, limiting the interviewer's ability to hear what is being said. Rubin and Rubin (1995) talk of narratives, fronts, accounts, stories, myths, oral histories and life histories as means by which people communicate opinions. Within this rich array of response styles the interviewer had to distinguish meaning and relevance.

Personal observation

Visual observations, particularly during transect walks and while providing support to others leading CRA facilitation processes, enabled the researcher to note group dynamics, the unsafe location and condition of dwellings and infrastructure (such as low lying hand pumps) and other aspects of a community pertinent to levels of vulnerability. Photographs were also taken.

[147] In practice most interviews ended with an agreement to share specific documents of interest, or to stay in contact should the researcher visit in the future.

3.2.3 Research limitations

Researcher bias

Researcher bias – where the skills, background, culture and interests of the researcher impact the methodology, analysis and findings of the research being conducted – is common to most forms of research, particularly social science research. While more analytical studies can use a variety of tools to set aside bias and hence minimise its impact on the research findings, an AR process of research can be much more susceptible to researcher bias. Further, the subject matter for this research requires that the researcher be engaged in a hands-on way, as a DRR practitioner, throughout much of the data collection and analysis in the field. Therefore the personal 'baggage' that the researcher brings has to be factored into the process. Despite this real-life dynamic, it is argued that this is the most effective way to further knowledge on this subject (see Chapter 3.5.1).

Opponents to AR advance arguments questioning the rigour of this approach to research predominantly on the grounds that there is too much scope for researcher bias. This bias can come about through a personal sense of what is right and wrong, and can manifest itself negatively through anger and prejudice, or positively through over-enthusiasm. Any bias will influence interactions, questioning style and the interpretation of what is seen and heard. This is not a fault of the researcher as such, but of the approach. Bowman et al. (1984, p.12) explains that, "the depth of understanding required to do qualitative interviewing makes it difficult for qualitative researchers to remain value free or neutral toward the issues raised." This is when it becomes important to recognise personal bias, which is, as has been described, considered healthier than avoiding interaction all together.

Appreciating the cultural context in which the research is taking place, and how it differs from the interviewer's cultural background, is a good step forward in accounting for bias. In terms of interview technique, on a practical basis, Rubin and Rubin (1995, p.22) suggest a way to avoid cultural misunderstandings. They recommend trying to "word questions early in an interview in an open way, expressing little of your own sentiments

until you figure out what to ask." By remembering to include the first three 'stages of an interview', as indicated above (see Chapter 3.2.2), the researcher was able to minimise cultural misunderstandings. Likewise, the use of personal observation and working with research partners during fieldwork were methods that addressed this issue.

To enhance the validity of the research, and reduce the likelihood of biased conclusions, Robson (2002) suggests prolonged involvement, triangulation, negative case analysis, and audit trails. The benefits of prolonged involvement are obvious particularly in terms of generating maximum understanding of the cultural context. In response to this, the main focus of research in India, and specifically in Bihar, was undertaken intermittently over a 5-year period (2002-2007) encompassing pre and post flood disaster contexts. Triangulation has been demonstrated by including a wide array of people, approaches and circumstances. Negative case analysis has been used to highlight instances where theory appears to encounter difficulties and is perhaps disconfirmed. An audit trail, providing an accurate record of investigations, demonstrates robust and vigorous research. Therefore in most cases notes and transcripts were kept to increase the credibility of findings. Amongst other traits, these indicate transparency and consistency in the management of information and the conclusions being drawn (Rubin and Rubin, 1995).

Evasive and distorted responses

According to Lee (1993), efforts by interviewees to distort the truth, or provide an evasive answer, should be recognised. This is always going to be highly probable regarding the subject matter dealt with in this research, particularly when analysing the interface between unsafe conditions and the social and economic causes of such circumstances. However, in the words of Rubin and Rubin (1995, p.225), "The design of [AR and] qualitative interviewing [in general] provides the tools for encouraging people not to lie, for detecting bias, and for compensating for bias when it does occur."

In relation to interviewing, Rubin and Rubin (1995) recommend that by phrasing questions in a way that implies knowledge and familiarity with the subject, the chances of

receiving unhelpful answers can be reduced. However when 'text book' (normative) answers were encountered (i.e. the way things *should* be done, rather than the way they actually are) the researcher endeavoured to ask emotional questions, such as "how do you *feel* about X"? The intention was to unearth a depth to the response that has greater meaning and interest. On the positive side, it is important to note that identifying what could be an evasive or distorted response to a question illuminated an important piece of information regarding personal or organisational perspectives.

Managing power relations

By its nature AR, which has a social change agenda, exposes undemocratic relationships between groups (Greenwood and Levin, 1998, p.100). Interviewees may distort their responses because of the existing power dynamics that perhaps favour the status quo. Therefore handling the identification of power structures and the management of relationships within and across them was a significant challenge, just as in DRR itself. Twigg (2004, p.20) states, "Deciding how to acknowledge and include local leaders is one of the most difficult challenges in participation". The process of engaging local leaders in the AR could have been given more attention and time, as in practice existing local leaders (such as CBO leaders) were automatically assumed by research partners to be appropriate participants and there opinions were consequently solicited. The dynamic of their engagement in CRA and CBDRM in relation to local power relations was not thoroughly investigated and understood.

Likewise helping to generate an atmosphere of genuine participation among AR participants required careful facilitation (for example, through the use of PRA in focus groups). Where more than one person was involved in the process, such as in a focus group, there was often considerable effort for participants to 'preserve front' rather than speak openly about their feelings. Triangulation (particularly utilising local research partner's experience) was helpful in capturing meaningful interpretations of what was openly stated.

The researcher too could sometimes be given a position of 'power' or authority by others, whether consciously or unconsciously, particularly when visiting poor communities and representing an INGO. To help lessen the influence this had, a period of participant observation, as recommended by Macleod (1987), Padilla (1992) and Whyte (1955), was attempted. Working alongside local research partners, who would often lead a community facilitation process, was also thought of as a method of 'participant observation'. Any gaps between the researcher, individuals and groups within the fieldwork locations were bridged as best as possible by the local research partner's ability to act as a mediator, interpreter and facilitator. The local research partner was familiar and best able to understand the dynamics between the researcher and that of other participants, and how this could influence the process.

Other forms of vulnerability

The focus of this thesis is on social vulnerability. Other forms of vulnerability include economic, physical and environmental; as well as various expansions of social vulnerability beyond 'people', such as political and cultural (see Chapter 2.2.2). These other forms of vulnerability are outside the scope of this research and so were not included directly. However the indirect connection with this research is described in Appendix V.

Scope of stakeholder analysis

A wide range of stakeholders can have an influence on CBDRM. These can include, but are not limited to; the local communities themselves, government officials, the private sector, donors and other aid agencies, and NGOs. The focus of this analysis is on local communities and government; commonly cited as being of critical importance. Other stakeholders were viewed outside the scope of this research. While this presents a clear limitation to the analysis, it was felt that too broad an analysis could lose the level of depth required to answer the research questions effectively.

Also, in comparison with expert academic, practitioner and community perspectives, there was a more limited degree of government involvement in the research. Sufficient government interviews were held in the primary fieldwork location, but an expansion of this level of engagement in other locations would improve confidence in relevant research findings.

Location of primary fieldwork

The location of primary fieldwork was selected for several reasons (see Chapter 3.4.2 and Appendix B) and findings were supplemented with research undertaken in other contexts. However, within the primary fieldwork location all participants in the AR gave flooding a significant level of significance. This was on account of the regularity and impact that this natural hazard has upon the region due to high levels of vulnerability. The consequent level of prioritisation that this particular problem received and the enthusiasm at different levels for disaster management is unusual.

Further, insecurity and conflict have significant ramifications on vulnerability to natural hazards, and such conditions are commonplace in many regions. However the complex relationship between disasters and conflict was not particularly relevant within the fieldwork locations and thus did not influence findings.

3.3 Progression of Research

The research process followed a very similar track to 'Denscombe's Model of Action Research' (see Figure 3.1), with the initial research need identified through professional practice, verified through theoretical investigation, and then further articulated through a process of strategic AR and planning. This section describes each of these phases in this progression, ending with a discussion on 'saturation' within the research process.

The phases outlined below are representative of the flow of investigation and style, not indicative of a precise ordered sequence. In reality phases merged into each other and

were more iterative. Appendix W illustrates key periods and milestones during the research period.

3.3.1 Phase one: Practice

The researcher's role as a DRR practitioner, with the UK-based NGO Tearfund, generated the initial enquiry into the problem, which was gradually articulated within early research objectives.

Investigation into DRR at Tearfund began with an emphasis on the use of 'risk mapping' as a community-based technique to improve disaster awareness at the community level. However as the subject of Disaster Mitigation and Preparedness (DMP)[148] rapidly gained more attention[149], interest gradually expanded. It was through the researchers' interaction, mainly as a practitioner, with an unstructured consortium of interested parties (other practitioners, academics and disaster-affected communities) that a broader problem emerged. This concerned the *effectiveness* of CBDRM, particularly in terms of its sustainability and limited scale, and the role of CRA (including the use of risk mapping) as a tool to aid this process.

3.3.2 Phase two: Theory

Practical experience was increasingly supported by theoretical knowledge and enquiry. A purist AR social scientist could argue that this introduction of theoretical knowledge contaminates the AR process in two ways: Firstly, external ideas can begin to mould and structure the steps taken by the researcher; and secondly, as a consequence, this could interfere with findings as data is automatically fitted into a pre-conceived 'outsiders' framework of understanding. This purist approach however undervalues the experience offered by a wealth of academics and practitioners. It was of course important to consider what preconceived ideas and personal bias a broad awareness of the state of knowledge

[148] Tearfund's preferred terminology, particularly in the earlier stage of the research process

[149] As recently as in the 'Audit of UK Assets' researched for the IDNDR, the summary of key issues included the fact that "The UK NGO community, which is strong and active in Disaster Relief, has not responded in any significant way to disaster protective policies or programmes" (Davis and Westgate, 1999, p.57).

generated, but so long as this was viewed critically in a conscious and disciplined way, the blend of expert opinion with practical research in the field was only of benefit. As a result, the research objectives continued to develop as they became more refined and relevant to the emerging gaps in knowledge. Indeed, according to Greenwood and Levin (1998, p.115), "a good sign of the learning taking place in an AR project is when the initial questions are reshaped to include newly discovered dimensions".

The State of Knowledge chapter describes the key themes coming out of the literature, conferences and workshops relevant to DRR, and which have influenced the AR process. This material also provides a baseline so as to be able to compare research conclusions and highlight areas of new knowledge.

3.3.3 Phase three: Action research and Tearfund

Based on dual developments and through the combination of phases one and two, the first step in AR according to Greenwood and Levin (1998, p.4) had been taken. Firstly, the combination of practical experience with a theoretical framework for DRR highlighted numerous gaps in understanding. The problem was thus defined[150] (as reflected in the research aim and objectives in Chapter 1) and this was important to different groups, including those whose lives and livelihoods could be directly affected by the outcomes of the research. Secondly, there was a sense that research and action were not two separate activities but connected. This then was the background that led to the beginning of a new phase of AR *with* Tearfund.

AR, by its very nature, requires an environment in which analysis can be undertaken within a change agenda. In this case, the researcher's role within Tearfund (see Appendix T) provided the opportunity to investigate the identified gaps in knowledge, as part of a systematic programme of work with disaster affected people and relevant parties. There is a distinction between a theory-driven researcher, acting as a "technician or an apprentice"

[150] Although the research objectives remained on the same theme throughout this phase, they were frequently refined as the AR evolved.

(Dick, 2000), and a researcher taking advantage of opportunities and resources wherever possible; referred to by Dick as more of a "performing artist". The researcher's practical experience and Tearfund's interest in developing improved DRR capability provided a beneficial platform for critical research. Also, Tearfund's approach to relief and development, along with most INGOs, combines research, action and participation: the three core elements of AR.

The AR carried out had three main components[151]:

1. The development and testing of a CRA methodology – 'Participatory Assessment of Disaster Risk' (PADR).
2. The identification of good practice CBDRM – through a project referred to as 'Turning Practice into Policy'.
3. Supplementary semi-structured interviews of key individuals – undertaken at times as a Tearfund practitioner / action researcher, and at others as an independent researcher.

Despite the clear and extremely useful overlap between Tearfund's agenda and that of the researcher, some important differences occurred. These are described in Chapters 3.4.2 and 3.4.3.

3.3.4 Phase four: Fusion of horizons

Throughout the research process, theory was developed and tested, then amended and tested again. 'Theoretical saturation', as Glaser and Straus (1967) put it, determines when the research should stop. This occurs when the information gathered supports a small number of integrated themes, and each additional interview, focus group meeting or community activity adds no more ideas or issues (Rubin and Rubin, 1995, p.47). While it is not possible to claim that 'no more ideas or issues' are ever going to emerge, it is assumed that the research has reached a saturation point. Gadamer (1982) calls this a 'fusion of horizons', implying that a sense of theoretical adequacy is accomplished

[151] A detailed explanation of the methodology used for each of these components is provided in Chapter 3.4

amongst those involved, even if perfect concurrence is elusive. Those that have been actively involved in the research, the AR participants, should recognise the significance of the conclusions being reached. This is referred to as 'internal credibility' (Greenwood and Levin, 1998). However what is most important is that the presentation of findings convinces not only the active participants but also those who were not involved in the process. This will indicate 'external credibility' too.

3.4 Methodological Approach

This section describes in detail the specific activities undertaken to conduct the research.

3.4.1 Theoretical research

A process of theoretical research was essential to this research process, allowing the researcher to document and analyse current thinking on disaster risk management and CRA, as well as providing the theoretical context for the AR process.

The State of Knowledge chapter describes the findings from this process, and was developed through a combination of literature reviews and the researcher's attendance at conferences and workshops.

Literature

Literature was segregated into categories based on its relevance to this research (see Appendix A.1). It was then analysed and summarised into key findings to form the theoretical basis for the AR. The methodologies employed to undertake the research were influenced by good practice and core principles in disaster management as described in the literature.

Conferences and workshops

The researcher attended several conferences and workshops during the course of the research period that provided a valuable source of information, ensuring that knowledge was as up-to-date as possible (see Appendix A.2). In particular the 'Social Vulnerability

and Capacity Analysis Workshop', the 'International Workshop on Community Risk Assessment' and the 'Critical Guidelines of Community Based Disaster Risk Management Workshop' were events at the very forefront of the subject. The researcher used these conferences to supplement knowledge and latest thinking as described in the literature.

3.4.2 Development of community risk assessment tool

Tearfund's aim

Tearfund's aim was to develop a guidebook (for the ROOTS[152] series), incorporating a new participatory methodology to help in the assessment and reduction of the risk of disaster in vulnerable communities. This was because the organisation recognised the importance of CRA to achieve DRR, and yet there appeared to be some gaps in existing CRA methodologies. These were expressed as being:

- A lack of emphasis regarding an investigation into the causes of people's vulnerability.
- Inadequate links between assessments and action planning.
- A need for improved practical step-by-step guidance for CRA facilitators.
- A stronger connection between DRR and 'normal' development programming and humanitarian aid assistance.

With particular emphasis on the desire to investigate the underlying causes of people's vulnerability, the 'Crunch and Release Models' (Blaikie et al., 1994) formed the basis of the tool's methodological framework. An initial draft CRA tool was developed in 2003 through desk-based research at Tearfund in the UK[153]. The CRA tool later became known as 'Participatory Assessment of Disaster Risk' (PADR) and was published as the focus of the ROOTS 9 guidebook 'Reducing Risk of Disaster in Our Communities' (Venton and Hansford, 2006). Extracts of the guidebook are included as Appendix X.

[152] Resourcing Organisations with Opportunities for Transformation and Sharing
[153] Marcus Oxley, Tearfund's Disaster Management Director, was instrumental in developing the initial draft

Researcher's aim

The researcher acted as a focal point for this work and had primary influence on its progression. The *shared* aim with Tearfund was however *supplemented* with an academic interest and motivation. This manifested itself in the following ways:

- Maintaining a *critical perspective* on the strengths and weaknesses of the CRA tool being developed.
- A particular interest in the *process* associated with developing the CRA tool, rather than the product alone.
- The careful *documentation of learning* throughout the process.

The primary fieldwork undertaken in the development of the CRA Tool is described below. Appendix Y contains a flow chart of the key milestones.

Fieldwork preparation

Primary fieldwork was undertaken in India for the following reasons:

- India is a disaster-prone country with a growing interest in DRR (see Chapter 2.4.4).
- Tearfund has a strong relationship with partners in India working on humanitarian assistance and DRR.
- The researcher already had experience of working in India and was known by the partners.

The researcher went to Delhi in November 2003[154] specifically to meet with Tearfund partner organisations Discipleship Centre and EFICOR (see Appendix Z). The purpose of the trip was three-fold:

1. To explain why it was felt that there was a need to develop a new CRA tool so as to fill the afore mentioned gaps in an endeavour to improve DRR.

[154] Telephone and email contact preceded this visit

2. To explain an idea for a basic methodological approach for testing the CRA tool in India (and elsewhere) and determining whether the partner organisations were interested in being partners in this initiative.
3. To begin arranging fieldwork (if acceptable).

As a consequence of the acceptance and interest in this agenda, fieldwork was arranged to occur in four disaster-prone States between March and June 2004:

1. Bihar - Dharbanga District with Discipleship Centre (primary fieldwork location)
2. Andhra Pradesh - Khammam District with EFICOR
3. Gujarat - Kutch District with Discipleship Centre
4. Orissa - Bhubaneshwar and Sambalpur Districts with EFICOR

At the start of the 14-week period of fieldwork, a briefing was held on 16 March 2004 in Delhi with staff from EFICOR and Discipleship Centre. The schedule for the forthcoming fieldwork and logistical arrangements were the main purposes.

Selection of communities in Bihar and Andhra Pradesh

The initial CRA tool was tested in severely flood-affected communities in Bihar and flood and drought affected communities in Andhra Pradesh[155]. The locations for testing of the CRA tool were selected carefully by the research partners; only poor and hazard-exposed villages were chosen where the organisations had an existing relationship with community members and had an intention to continue working alongside these communities in the future.

Primary fieldwork location, Bihar

The researcher further focused analysis for the purposes of this thesis on Bihar, for the following reasons:

[155] The Bihar and Andhra Pradesh fieldwork became the subject of case studies published by Tearfund (2005a and 2005b) and a 'Cost Benefit Analysis' (CBA) of disaster preparedness published by the Overseas Development Institute (Venton and Venton, 2004)

- Bihar is considered among the most 'hazard-prone' of Indian states (see Box 2.11) and therefore provides a relevant environment for investigating DRR.
- The presence of a strong local NGO as a research partner (Discipleship Centre) facilitated the AR process and allowed in depth investigations with local communities that may not have otherwise been possible.
- Tearfund presented an opportunity to work in the same District of Bihar on two occasions[156].
- The opportunity was presented to consider the effectiveness of CBDRM in light of the regularity of flooding[157].
- Bihar suffers from high levels of poverty, issues of marginalisation for certain groups on account of the social fabric of the area, relatively poor accessibility, minimal private sector investment and accusations of government corruption. Thus flooding, whilst important at many levels, is set within the context of there being numerous other challenges to development.
- Flooding is set to have wider implications globally on account of climate change, urbanisation and the habitation of floodplains (see Chapter 2.2.1), aiding the likelihood of learning from Bihar having wider implications.

Fieldwork in Bihar and Andhra Pradesh

Community members and village leaders were informed about the plan by the researcher and research partners to carry out an investigation into risk, particularly in relation to natural hazards, and their permission was sought. Emphasis was placed upon the link between the assessment and action planning. In other words, the exercise was designed to be more than data collection; information provided and discussed would help the research partner in their ongoing commitment to work alongside community members beyond the period of 'research'.

[156] In 2004 and 2006

[157] There is a greater opportunity to undertake an ex-post evaluation related to flooding within a typical research period, than an ex-post evaluation related to an earthquake, for example, with a less predictable return period.

The researcher undertook a transect walk in each village ahead of focus group meetings so as to observe general conditions, such as: The layout and size of the village; Its geographical location (particularly in relation to river(s), embankments or other high ground, access routes and so on); Demographics; Living conditions; Activities underway (particularly livelihood activities); Buildings of special significance (for example, temples); Water points (hand-pumps and wells); Any other points of interest.

Fieldwork was then predominantly based on focus group work utilising pre-prepared guidelines, that were themselves based upon a draft CRA tool (see Appendix AA). The guideline questions covered the following main issues:

- **Hazard assessment**: Prioritisation / ranking; history; frequency; scope; severity; speed of onset; duration; and early warning systems.
- **Elements at risk**: Segregated into categories of people; relationships; natural resources; physical factors; and livelihoods[158].
- **Vulnerability, and its causes**: Segregated into categories as above.
- **Capacity**: Segregated into categories as above.

The focus group meetings were held at pre-agreed times and locations. Typically groups were segregated into women and men, and at times these were further segregated, such as women's 'Self Help Group' (SHG) members or male members of village development committees. An ideal group size was 12-15 people, but frequently numbers swelled beyond this. PRA techniques, such as timelines, seasonal calendars and risk maps, were supplementary to the focus group discussions.

The researcher was the principle facilitator, whereas research partners had responsibility for making all necessary preparations and arrangements with the communities to be visited in advance, and provided translation and note taking support. At the end of each day a meeting was held among research partners to discuss findings and issues, and make any necessary adjustments for future activities. Notes were written up.

[158] Based on human, social, natural, physical and financial 'capital' (DFID, 1999-2001)

Details on dates, village name, activities undertaken and attendance for the fieldwork is provided in Appendix AB for Bihar and Appendix AC for Andhra Pradesh.

Community risk assessment training workshop

The initial findings based upon the fieldwork undertaken in Bihar and Andhra Pradesh led to some adaptations in the CRA tool, and provided experience in its practical relevance and usage. Twenty field staff from Tearfund partner agencies in India working on disaster-related programming in seven States, including the existing research partners from Discipleship Centre and EFICOR, were convened on 4 – 6 May 2004 for a training workshop in Mussoorie, India (see Appendix AD). The workshop aimed to train participants in CRA, based on the tool under development and its use in Bihar and Andhra Pradesh. The researcher led the workshop with a Tearfund colleague[159].

The workshop also sought to engage participants in the research process. Subsequent to the training therefore all participants were tasked with testing the CRA tool within their existing programme locations in the seven different Indian States. A follow-up Feedback Workshop was arranged for 14 – 15 June 2004 to discuss findings.

Mid-term review

A mid-term review was held with Discipleship Centre and EFICOR managerial staff on 6 May 2004 in Mussoorie ahead of further research activities.

Fieldwork in Gujarat and Orissa

In May and June 2004 the researcher visited research partners in Kutch District, Gujarat and Bhubaneshwar and Sambalpur Districts in Orissa respectively. The purpose of these visits was to support the CRA activities that the field staff were undertaking based on the Mussoorie CRA Training Workshop. In these locations the research partners were the

[159] Dr Bob Hansford, Disaster Mitigation and Preparedness Advisor

main facilitators of the CRA process[160]. Suggestions for the improvement of the CRA tool were documented.

Community risk assessment development feedback workshop

A 'CRA Development Feedback Workshop' was convened 14 - 15 June 2004 in Gurgaon, near Delhi. Twenty research partners from the seven Indian States attended so as to provide their lessons learnt based on experience in using the CRA tool. The researcher led this workshop. Appendix AE provides further details on the workshop background, objectives, template for participants' presentations (including the use of 'problem trees') and workshop schedule.

Final review

On completion of the 14-week period of fieldwork, a final review was held with Discipleship Centre and EFICOR managerial staff in Delhi on 16 June 2004.

Additional community risk assessment development feedback workshop

It was felt by participants and other key research partners after the 'CRA Development Feedback Workshop' in June 2004 that more time using the CRA tool would be beneficial in terms of maximising the opportunity to provide in-depth comments based on widespread usage. Therefore the researcher returned to India for an 'Additional CRA Development Feedback Workshop' 25 - 26 November 2004 in Manesar near Delhi. Appendix AF provides further details on the framework questions for participants' feedback on the CRA tool, the framework questions for participants' feedback on Bihar floods (post the 2004 flooding which occurred after the initial CRA and DRR activities had been undertaken in selected communities), and brief details on the discussion regarding linking CRA with programming.

[160] This benefited the researcher who was then better able to focus on group interactions (Rubin and Rubin, 1995, p.144)

Supplementary fieldwork

Supplementary fieldwork was undertaken that had bearing on the research. In chronological order this included:

- Feedback from the CRA tool's use by Tearfund and Tearfund partners in Africa[161] through the period 2004 – 2005.
- Learning review - regarding the use of the CRA tool in different contexts – at Tearfund in London (9 December 2004).
- CRA in Delhi Slum, India (19 – 25 November 2004).
- Fieldwork in the Philippines (4 – 16 April 2005) (see Chapter 3.4.4).
- CRA Training Workshop in Aceh Province, Indonesia (1 - 16 June 2005).

From this point in the 'Supplementary Fieldwork' the CRA tool was finalised and published under the name 'Participatory Assessment of Disaster Risk' (PADR)

- CRA Training Workshop in Bihar, India (primary fieldwork location) (20 - 28 February 2006) - A key element of this training was its immediate practical application by participants in local communities.
- CRA Training Workshop in Rawalpindi, Pakistan (9 - 13 May 2006).
- CRA Training Workshop in Peshawar, Pakistan (10 - 17 March 2007).

For further information see Appendix AG.

3.4.3 Identification of good practice community based disaster risk management

Tearfund's aim

Tearfund's aim was to determine what constitutes good practice in DRR at a community level. The results of this study would then be used, by Tearfund partner organisations, in the design of country-specific advocacy strategies to influence government policy and practice on DRR. For this purpose the project was called 'Turning Practice into Policy'.

[161] Eritrea, Ethiopia, Malawi, North Sudan, South Sudan and Sierra Leone

Researcher's aim

The researcher acted as the consultant to this project[162] with primary responsibility for data analysis and advice on data collection. As such the *shared* aim with Tearfund was *supplemented* with an academic interest and motivation, which manifested itself through:

- A desire to ensure that good practice CBDRM is *connected* with an investigation into the challenges in linking local-level processes and actions with country government relief and development policy and practice.
- A *critical perspective* on the methodology adopted.
- A *critical perspective* on any gaps in data collection and assumptions made in data analysis.
- The careful *documentation of learning* throughout the process.

'Turning Practice into Policy' was divided into two components: Firstly, the identification of good practice CBDRM; and secondly, the link between CBDRM and government policy and practice. As such it sought to address the lack of understanding regarding methods of enhancing the sustainability and scale of CBDRM.

Community fieldwork

The first part of the research for the 'Good Practice CBDRM' investigation was based on fieldwork undertaken by Tearfund facilitators with the support of Tearfund partners during the autumn 2006. Focus group meetings were held in hazard / disaster prone communities of Afghanistan, Bangladesh, Burkina Faso, India[163], Indonesia, Malawi and Sri Lanka in places where Tearfund partners had a relationship with community members. The aim of the fieldwork was to identify what local people considered to be good practice CBDRM. These were examples of actions, measures or processes that they deemed had, or could have, a positive affect in reducing their vulnerability to hazard(s). In other words, fieldwork focused on the identification of local capacities and risk

[162] However the researcher was working as an employee for Tearfund during the design phase of 'Turning Practice into Policy' and had a significant role in its development and incorporation within a DFID DRR grant to Tearfund.

[163] The data was based on the researcher's findings from the fieldwork undertaken in Bihar in 2004 and 2006

reducing actions. Facilitators used common guidelines to aid the focus group meetings (see Appendix AH).

The researcher received feedback from the facilitators in the form of a narrative of the fieldwork undertaken. Findings were analysed within a framework based on three 'phases' (normality / pre-disaster development; emergency / chronic crisis; and, recovery), and the sustainable livelihoods categories of 'capital'.

Expert academic and practitioner opinion

During the autumn 2006 expert opinion was sought from academics and practitioners with specialist experience of the subject from within the target countries (as listed above) and also internationally, so as to widen the scope of the research and build on the community fieldwork findings (see Appendix AI). A questionnaire, with accompanying letter, was designed by the researcher and sought responses to the following questions (see Appendix AJ):

1. What are the challenges associated with linking good practice CBDRM with government policy and practice?
2. Can you cite any examples of where NGOs have been successful in this, and how challenges were overcome to achieve it?
3. Can you identify examples of good practice CBDRM?

The content of the questionnaire responses were analysed by the researcher. Initially key themes were identified, and then a structure was developed to demonstrate these. Findings were presented in a draft report (see 'Good Practice CBDRM Workshop' below) and latterly this structure was amended based on feedback.

Good practice community based disaster risk management workshop

A workshop was held in Tearfund's head office in London on 12 December 2006 to discuss a draft report[164] of the initial findings of the research. The practitioners, academics and the fieldwork facilitators already engaged in the research, plus additional practitioners, academics and selected Tearfund staff members were invited to attend (see Appendix AK for workshop participants and agenda).

The researcher presented findings from the fieldwork and questionnaire. Workshop participants were then divided into small groups to discuss a series of key questions. Feedback from the workshop was documented and used by the researcher to improve upon the earlier findings and develop a revised structure and report[165].

Government meetings

During the spring and summer 2007, to complement the community-based fieldwork already undertaken, research was undertaken by Tearfund partners in Afghanistan, Burkina Faso, Ethiopia, Malawi, Niger and Zambia on government perspectives on DRR. Guidelines and a questionnaire were provided (see Appendix AL). In particular investigations sought to gauge an understanding of government perspectives regarding CBDRM. Findings were submitted to the researcher for analysis.

'Turning Practice into Policy' reports[166]

During the autumn 2007, the researcher analysed all data (based on community fieldwork, expert academic and practitioner questionnaire responses, workshop feedback, and government meetings[167]) and developed three 'Turning Practice into Policy' reports:

1. Phase 1 Report: 'Perspectives from Communities and Experts on Good Practice Community Based Disaster Risk Management'.

[164] Good Practice Community Based Disaster Risk Management: Turning Practice into Policy (A Draft Tearfund Report) 12 December 2006
[165] Dated 12 June 2007
[166] To be published by Tearfund in 2008
[167] Plus Donor DRR Policy and Practice Research (see Chapter 3.4.4)

2. Phase 2 Report: 'Challenges in Linking Good Practice Community Based Disaster Risk Management with Government Policy and Practice'.
3. Synthesis Report.

3.4.4 Semi-structured interviews

To complement the findings emerging from the fieldwork, conventional qualitative interviewing techniques were utilised among key individuals to triangulate and critically analyse the findings from the AR. The research endeavoured to capture a range of views by seeking interviewees who represent different or even opposing perspectives. This is best demonstrated in the primary fieldwork location of Bihar where comparisons were made between local villagers and powerful landowners or government officials.

Access to numerous experts (practitioners and academics) around the world, predominantly in India, the Philippines, Switzerland, UK and USA, was possible largely thanks to the researcher's role as a practitioner. Many individuals attended the same conferences, seminars and workshops as the researcher on several occasions (see Appendix A), thereby helping to develop relationships where useful dialogue could be achieved. Indeed, the State of Knowledge chapter incorporates a substantial amount of material based on personal attendance at events around the world and interaction with the participants.

Besides drawing on strong personal relationships, there were also several individuals whom the researcher only met once. In these circumstances it was probable that meetings were feasible predominantly due to the researcher's role as a practitioner.

Number of interviews

Excluding interviews undertaken in relation to the 'Donor Disaster Risk Reduction Policy and Practice' (see below), thirty-five interviews were undertaken with a total of forty-four people (some interviews had two or three interviewees present, and one interviewee was interviewed twice). This number of interviews / interviewees was considered an adequate

sample because during the course of the interview period (April 2004 to June 2006), a 'fusion of horizons' became apparent (see Chapter 3.3.4). This was aided by the fact that interviews were not held in separation from the wider AR activities, but interwoven with other forms of research (see Appendix W).

India

In India, interviews were held in Bihar, Andhra Pradesh, Gujarat, Orissa and Delhi in 2004, and again in Bihar and Delhi in 2006 (see Appendix AM Part 1).

USA

During the research period, the researcher spent periods of time in Boston, USA, on 'study leave' from Tearfund[168] and latterly as an independent consultant. These visits provided an opportunity to conduct interviews among expert academics and practitioners based in the area (see Appendix AM Part 2).

The Philippines[169]

Further research with Tearfund as an AR partner was undertaken in support of the development of the CRA methodology in the Philippines through a series of semi-structured interviews (4 - 16 April 2005) (see Appendix AM Part 3). The objectives of this fieldwork relevant to this research were[170]:

1. To learn from the Philippines experience of developing community-based disaster management plans, based upon CRA[171].
2. To examine the processes of connecting the analysis with community planning, and document any relevant tools / templates used.

[168] Study leave was possible on account of the researcher accumulating 'study days' by working full-time for Tearfund despite being employed on a part-time basis.
[169] Two field trips were also undertaken in the Philippines (see Chapter 3.4.2).
[170] A further objective of this fieldwork, to learn more about tsunami early warning systems and how these have been integrated into educational curricula and disaster management planning for coastal areas (as this research was four months after the Indian Ocean tsunami), had little direct bearing on the research objectives.
[171] Referred to as 'Hazard Vulnerability and Capacity Assessment' (HVCA)

3. To determine the key elements of local risk-reduction plans and the role of community-based organisations in developing and maintaining these plans.
4. To study the ways in which these community plans interface with Government plans and interventions.
5. To observe how local disaster management plans have been used practically and effectively, and collect any examples of simple, low cost mitigation or preparedness measures.

Guidelines for semi-structured interviewing covered the following subjects:

- The CBDRM planning process.
- The role of CBOs.
- Connecting CRA with action planning.
- Low cost / no cost mitigation measures.
- Integration of disaster awareness in school education.
- Early warning systems.
- Government DRR policy and practice.
- The interface between CBDRM and government policy and practice.

When permitted by the interviewee, interviews were recorded and transcripts taken. These account for the majority of meetings held, but otherwise notes were taken.

Donor disaster risk reduction policy and practice research[172]

The main focus of research was preceded by an investigation, undertaken by the researcher with a Tearfund colleague[173], on how institutional donors were responding to

[172] Country governments, at all levels from local to national, often cite lack of resources and technical capacity as reasons for low levels of prioritisation of risk reduction (see Chapter 7.3.1) especially in developing countries; implying that if these were rectified, improvements in risk reduction would occur. They therefore look to their donor partners for assistance: or more cynically, as a different way of 'abdicating their responsibilities' (Twigg, 2004). Although by no means do these deficiencies encompass and account for all aspects hindering country governments from implementing DRR, they do have important bearing. The DRR policy and practice of donor institutions is therefore relevant to this thesis on account of the fact that it highlights some of the reasons how and why donor institutions themselves have been grappling with the subject, which in turn influences their effectiveness in promoting and funding DRR with recipient countries and agencies.

the issue of DRR (Tearfund, 2003). Between March and June 2003, nine key institutional donor institutions were interviewed through a series of twenty-five interviews (and thirty-six interviewees) (see Appendix AN) to determine the level of priority they gave to DRR within their relief and development programming, and the reasons behind this level of prioritisation. Views were also sought from the ProVention Consortium, UN/ISDR, IFRC, the Centre for Research on the Epidemiology of Disasters (CRED), NGOs and independent consultants. The findings were presented and discussed at a conference in Westminster, London on 14 November 2003 attended by forty-six representatives of the above institutions plus academia and NGOs (see Appendix AO).

Consequently in 2006 and 2007 a 'Review of Donor Progress Mainstreaming DRR' was undertaken (Tearfund and UN/ISDR, 2007)[174]. Eleven donor institutions submitted findings of their reviews[175] (see Appendix AP).

3.5 Conclusion

The methodological approach adopted to undertake this research, like all others, met with numerous challenges and opportunities. As a result, in essence, the experience of undertaking this research was a rich and interesting journey. Aspects of this may be of interest to other researchers, and so this section highlights some of the key issues arising from the researcher's experience.

3.5.1 Reflections on undertaking action research in poor and vulnerable communities

Good practice CRA is a process of investigation and analysis that places people and participation at the heart of its strategy. Too often, however, assessments by outsiders, particularly disaster assessments, are criticised for unrealistically raising people's

[173] Sarah La Trobe, Senior Policy Officer - Disaster and Environment
[174] This was undertaken by the researcher while acting as a consultant on behalf of Tearfund and presented at the 'Global Platform for Disaster Risk Reduction' in Geneva in June 2007
[175] And a further undertook the review but was too late to be included in the report presented at the 'Global Platform'

expectations. Local people provide time for the benefit of the outsider's data collection, but with little or no follow-through for their benefit. This extractive process is inappropriate, and can be damaging in terms of undermining local capacities. It is also considered un-ethical. Good practice CRA is therefore not limited to assessment and analysis, but closely linked with action planning.

Therefore undertaking research on the process of CRA should not be divorced from this reality. A purely academic 'experiment' collecting data from local people is only useful to outsiders. Indeed carrying out such an experiment is unlikely to reap useful information anyway, as it is theoretical and not practical which will influence the dynamic between researcher and community, lessening the quality of data. To avoid falling into the same trap of inappropriate approaches to CRA, a researcher needs to be engaged in a genuine CRA investigation with local participants. AR, which has also been described as "a research activity with a social change agenda" (Greenwood and Levin, 1998, p.4), is therefore the most appropriate research methodology. Indeed it is argued by the researcher, from an ethical perspective, that it is the *only* appropriate research methodology for investigations of this type at a community level.

3.5.2 Patterns of application of action research tools

The pattern of investigation, that was applied in both the 'Development of the CRA Tool' and the 'Identification of Good Practice CBDRM' components of the research methodology, leant itself to become a rich process that collected data, presented findings, and provided feedback loops. There is some merit in outlining this simplified sequence for the consideration of other researchers.

In the case of the development of the CRA tool, the pattern of the primary fieldwork comprised:

1. *Community insights* through the use of PRA tools and facilitator's guidelines.
2. Reflections and training of CRA facilitators through the use of a *workshop.*

3. Further *community insights* through the use of PRA tools and facilitator's guidelines.
4. Reflections and feedback through the use of a *workshop.*
5. *Publication*, in the form of the production of the CRA tool.

And in the case of the identification of 'Good Practice CBDRM', the pattern of investigation comprised:

1. *Community insights* through the use of guidelines.
2. Reflections and *feedback.*
3. Opinion of expert academics and practitioners through the use of a *questionnaire.*
4. Reflections and feedback through the use of a *workshop.*
5. *Publication*, in the form of a report.

Both approaches are community-based (in terms of beginning with community-based data collection and analysis), include the use of workshops for the opportunity to reflect on and discuss initial findings, and conclude with a publication that is itself 'action orientated'[176] and therefore provides opportunities for further reflection and feedback.

3.5.3 Practitioner and researcher

There are many benefits of part-time research when the subject of research is closely linked with the researcher's employment. Research of this nature benefits from:

- Remaining 'grounded' and relevant in the workplace.
- Directly informed by developments within the professional field.
- The opportunity for networking and developing strong relationships with other professionals.

And it can also be argued that there are benefits to the employer on account of the strengthening of one's professional practice based on an increasingly enhanced academic

[176] The CRA tool is for use in hazard-prone environments, and has been used widely improving knowledge on CRA facilitation. The report on good practice CBDRM, under the name 'Turning Practice into Policy' is for use by NGOs in their development of DRR advocacy strategies.

perspective and understanding. However, such a 'double-act' also presents numerous challenges to the researcher. These, together with possible strategies that can be deployed to help overcome them, are described in Table 3.1.

Table 3.1: Practitioner and Researcher Challenges

CHALLENGES	STRATEGIES TO OVERCOME CHALLENGES
The need to manage two inter-connected and yet separate agendas, often occurring simultaneously. When on 'employer's time' there is a much greater pressure and necessity to adhere to the employer's agenda.	Helping to shape the employer's agenda is a good way of dovetailing research with practice[177]. A flexible attitude is required, taking advantage of valuable research opportunities as they present themselves. However care is required to maintain a sense of direction and purpose with the research.
Due to time, capacity and money constraints a project[178] is likely to be designed and undertaken based on a realistic consideration of feasibility. Then in practice, these same constraints may result in activities being undertaken in a less vigorous and comprehensive manner as would be preferable, clashing with research ideals. Frequently in a humanitarian aid department context, a disaster is the most likely reason why priorities shift.	Recognising such dynamics and research limitations is important so as to maintain a critical perspective on proceedings.
Creating the research 'space' to capture, reflect upon and write-up notes that derive from work undertaken as a practitioner, is a discipline that can be hard to achieve.	The management of one's time is important. This does not have to be constrained by 'normal working hours' as, depending on the individual, opportunities to reflect may be achieved while

[177] For example, the researcher was able to suggest to Tearfund that expert academic and practitioner opinions were sought regarding the link between CBDRM and government policy and practice. This is critical in terms of identifying good practice and is a strong component of one of the researcher's objectives.
[178] A project could mean a task, initiative, programme, or activity etc.

CHALLENGES	STRATEGIES TO OVERCOME CHALLENGES
	undertaking outdoor activities, or listening to music for example.
If the part-time employment / research balance occurs on a frequent basis, for example a normal working week comprises periods of both employment and research, there can be a loss of creative / intellectual momentum. In most cases research momentum builds up over the course of a few hours or days. So if the researcher only has one day a week, for example, to focus entirely on the research agenda, much of this day could be spent reflecting backwards on what was being worked on before, with little time for forward motion.	At least at intervals, perhaps once or twice a year, longer periods of research (measured in weeks not days) were found to be preferable. But this may not be feasible depending on employer / employee circumstances.

This chapter has explained how the research objectives are to be met through the application of AR. The appropriateness of this approach has been highlighted, but within a context of appreciating the known limitations so that these can be managed to the best of the researcher's ability.

The next chapter presents the data collection and its analysis. The development of a CRA tool, the identification of good practice CBDRM and the use of semi-structured interviews lead the research towards its aspirations in identifying methods of enhancing the sustainability and scale of CBDRM through effective CRA.

4 INTRODUCTION TO DATA COLLECTION AND ANALYSIS

4.1 Introduction

This chapter introduces the data collection and analysis undertaken by the researcher. It explains why the research objectives are important, but more significantly than this, it explains how they are inter-connected.

In doing so this chapter draws on a component of the research itself that was focused upon the identification of good practice CBDRM[179] (under the project 'Turning Practice into Policy', see Chapter 3.4.3). This is because investigating methods of enhancing the sustainability and scale of CBDRM should be based upon an understanding of existing good practice, and the research presented in this chapter expands upon the current state of knowledge on this subject[180] (see Chapter 2.2.5).

The actual data collection and analysis pertaining to the primary research objectives is presented in the next three chapters (Chapters 5, 6 and 7). Each of these chapters addresses one of the three primary research objectives.

4.2 Principles and Practice of Community Based Disaster Risk Management

4.2.1 Principles of community based disaster risk management

Sustainable CBDRM is based on some important *principles* that are applicable in most if not all contexts. Etkin and Davis (2007) identified the most common issues that were generally referred to with reference to the principles of disaster risk management (see Chapter 2.2.6). Among the issues they identified were subjects that can be described as:

- Undertaking risk assessments.

[179] Although research was described as investigating 'good practice' CBDRM it is hard to distinguish a difference between this and 'sustainable' CBDRM. CBDRM cannot be considered good practice if it is not sustainable, and sustainable CBDRM is surely good practice.
[180] In this introductory chapter only the researcher's *analysis* of the investigation into good practice CBDRM is drawn on (not data collection).

- Involving multiple stakeholders.
- Integrating disaster risk management within the development context.

Endorsing these findings, undertaking risk assessments and involving multiple stakeholders were highlighted within the first two process principles of 'Critical Guidelines of CBDRM' by ADPC (2006)[181], while integrating disaster risk management within the development context was considered implicit through them all. Furthermore these subjects were included among just eight factors enhancing community based disaster management by Shaw and Okazaki (2003 and 2004) in UNCRD's important investigation into sustainable community based disaster management in Asia. And finally, as was seen in Appendix J these three subjects were also identified in this research as relating to Etkin and Davis' (2007) 'strategic principles', but with risk assessment actually argued to be both strategic and tactical. This is also true of the involvement of multiple stakeholders.

The combined evidence then gives these three principles of CBDRM a high level of significance. However the research into good practice CBDRM drawn on here demonstrated that they are more than principles that "exist to *guide* actions…or define *the way* to act" (Etkin and Davis, 2007). They are also a practical form of local action itself.

4.2.2 Good practice community based disaster risk management

The research emphasised that by adopting the appropriate *principles* a process will begin that ultimately will lead to the development of CBDRM measures, described here as *examples*. Examples of CBDRM may include building houses on stilts in flood-prone areas or the introduction of specific crops better able to withstand drought conditions, for instance.

However the processes of decision-making regarding what risks exist, which ones are important, which ones can be reduced, and how best to achieve this will nearly always be different. Thus the research endorsed the opinion that CBDRM is highly context

[181] Process 1: Undertake groundwork (with government) for sustainable CBDRM to occur, with local stakeholders as the driving force; Process 2: Select communities for CBDRM through risk assessment

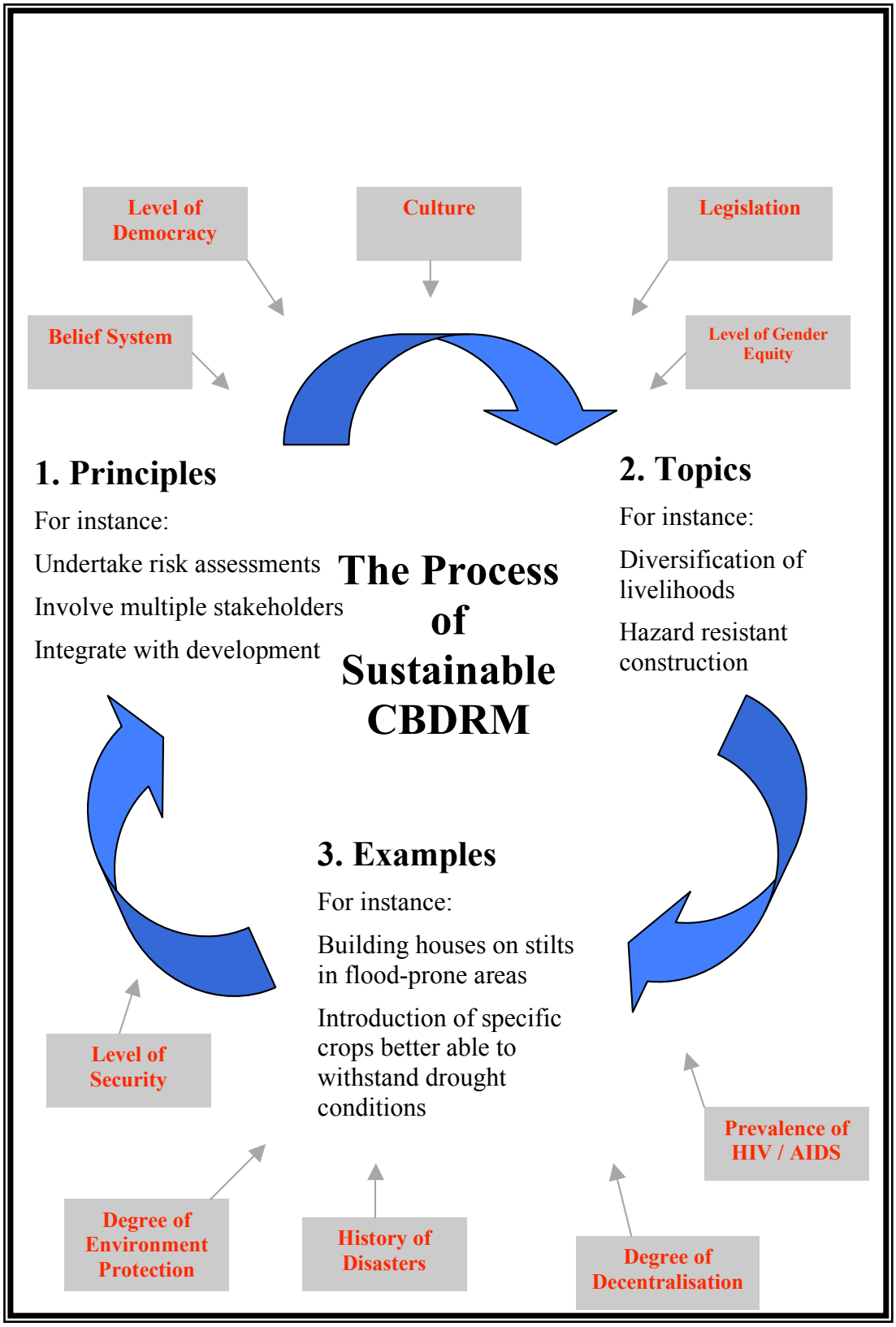
specific. For example, Annelies Heijmans (Wageningen University) was particularly helpful in outlining this characteristic of CBDRM in her questionnaire response (see Appendix AJ) and during a workshop (see Appendix AK). She stated,

> "Risk reduction measures are community specific. Instead of focusing on measures that work in a specific context, it would be good to focus on the processes of how interventions are being socially constructed (processes of trust building, values and power dynamics, negotiation outcomes, skills and knowledge, nature of participation, and the different ways of looking at the world)."

As a consequence of the context specific characteristics of CBDRM, examples adopted in one location at a particular point in time may well be very different from the CBDRM examples appropriate in another place or time, even when the exact same principles were followed. However, although specific examples of CBDRM can be almost limitless, the research found that examples fell into a more manageable list of *topics*.

Research into good practice CBDRM found that the process of sustainable CBDRM, as illustrated in Figure 4.1, can be thought of as operating in a loop: The *principles* of CBDRM are applied to make improvements in terms of various CBDRM *topics*, resulting in specific *examples* of CBDRM. The examples, and how effective they are at reducing risk, should be fed back into the continual process of risk reduction so as to improve the way things are done and stay on top of emerging issues. This does not all happen in a vacuum, oblivious to other issues: it happens within a particular context. The context describes influences upon the CBDRM process such as the level of democracy and decentralisation, the cultural norms, the influence of legislation, and the degree of gender equity.

Figure 4.1: The Process of Sustainable CBDRM



The vast majority of the topics identified by the research into good practice CBDRM are outside the parameters of this investigation. The full report provides details (Venton, 2008 forthcoming) and Appendix AQ includes a summary of the framework used to analyse and structure findings. Here it is important to note that among the 53 topics identified[182] (see Box 4.1), undertaking risk assessment, involving multiple stakeholders, and integrating disaster risk management within the development context all emerged (highlighted with italics). This emphasises the special nature of these subjects as being both 'principles and practice'.

Box 4.1: Good Practice CBDRM Findings

The topics of good practice CBDRM were identified as:

NORMALITY / PRE-DISASTER DEVELOPMENT

- Financial: Diversification of livelihoods, Development of hazard resistant arable farming, Development of community savings schemes, Availability of pro-poor insurance, Protection of household assets, Group cost sharing
- Natural: Protection and reintroduction of native trees, Water conservation and management, Fire protection, Maintenance of soil fertility, Natural resource protection
- Physical: Hazard resistant privately owned buildings, Hazard resistant public buildings, Provision of access roads, bridges and transportation, Hazard-aware land use planning, Appropriate structural flood mitigation measures, Flood resistant safe drinking-water supply, Development of people-centred early warning systems
- Human: Awareness raising, Supporting local knowledge and coping mechanisms, Community disaster preparedness training, Child-focused disaster preparedness training, Training in earthquake-safe construction, Public health education for disaster, Development of strong local leadership for disaster risk reduction, Gender sensitive programming, Livelihood based capacity building
- Social: *Assessment of disaster risk,* Integrating disaster management responsibilities within community based organisations, *Development of a multi-stakeholder and multi-levelled approach to disaster planning*

EMERGENCY / CHRONIC CRISIS

- Financial: Utilising contingency funds, Avoiding the sale of assets, Equitable provision of aid
- Natural: Utilising un-affected natural resources, Environmental protection

[182] One of the strengths of this research is that it de-mystifies CBDRM by providing a clear list of topics that have been organised within separate categories. However care is required when categorising CBDRM in this way as it can appear to fragment this multi-disciplinary subject, undervaluing the importance of integrated themes. Appendix AT also segregates community level risk reduction into different example measures.

- Physical: Community buildings used as evacuation shelters, Planned information dissemination, Protection of household belongings
- Human: Emergency response through local volunteers and leadership, Provision of support to the most vulnerable
- Social: *Community participation with assisting agencies,* Recognition of external sources of support, Protection of children at risk, Coordination among humanitarian aid providers

RECOVERY
- Financial: Restoration of livelihoods, Access to fair financing
- Natural: Restoration of the natural environment
- Physical: Building back better with hazard-resistant construction
- Human: Applying lessons learned
- Social: *Long-term multi-stakeholder planning,* Recognition of extended social networks, Strengthening and developing community groups, Restoration of school education

Good practice community based disaster risk management findings in relation to undertaking risk assessments

The research identified that without an awareness and understanding of the risks, solutions are going to be hard to find - particularly if the causes of risk are not identified and addressed. Disaster risk assessment was highlighted as an entry point for integrating DRR activities within development programming. The fact that different perspectives on risk and levels of acceptable risk would become apparent to participants through this process was raised. Good practice risk assessment emphasises the process over the product, and therefore a regular analysis of changing vulnerabilities, capacities and hazards was called for so that communities maintain and improve their resilience to disaster. This calls for the full participation of a wide range of people and organisations, including those who may normally be excluded from decision-making. The research also stated that organisations with access to climate change predictions need to be better connected into the assessment process.

Good practice community based disaster risk management findings in relation to involving multiple stakeholders

The research signalled that managing the risks associated with disasters is a complex process, largely because risk is experienced locally, but its causes may be generated elsewhere. Therefore many different organisations, groups and individuals within a

community and outside the community were called on to play a role for DRR to be effective. Within a local community, stakeholders were identified as being associated with different livelihood groups, CBOs, and religious institutions. External to the local community, stakeholder examples included government departments, the private sector, UN agencies, INGOs and NGOs. All were stated as having different perceptions of disaster risk, different agendas, and different ideas. Effective DRR would therefore require an integrated approach that involves as many stakeholders as possible working towards a shared goal. It was argued that not only would this approach reduce risk locally, but it would also have benefits beyond target areas. Therefore the research suggested that different stakeholders must be recognised and connections made through meetings. In particular, involving local government officials in risk assessment exercises was encouraged in an effort to develop a shared understanding of the problem and how to address it.

Good practice community based disaster risk management findings in relation to integrating disaster risk management within the development context

The integration of disaster risk management within the development context was implicit within research findings, particularly in relation to the category 'Normality / Pre-Disaster Development' (see Box 4.1).

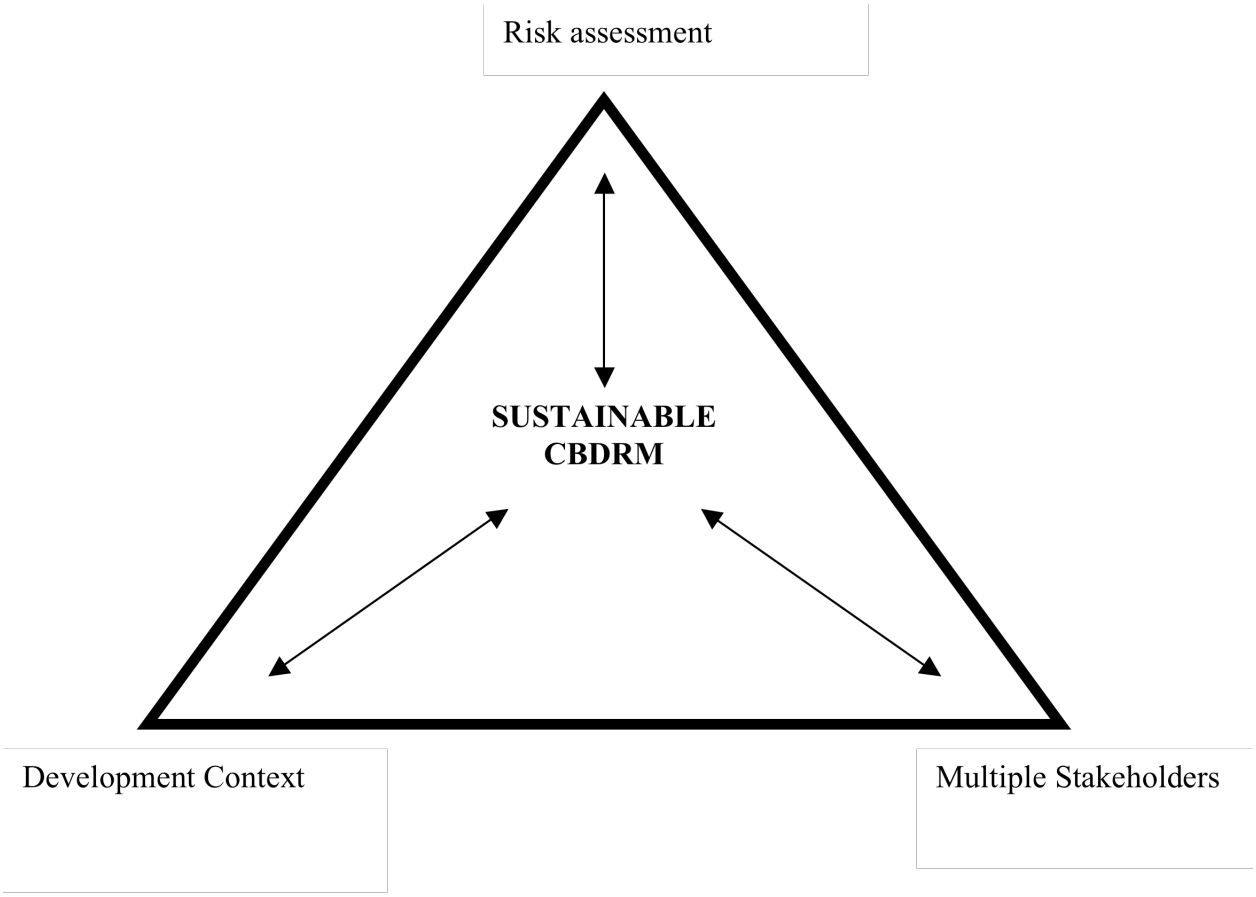
4.2 Inter-Connected Research Objectives

Each of the three subjects described above has bearing on CBDRM, but they are also inter-connected:

- *Risk assessment* occurs within a developmental context and is shaped by it. Likewise risk assessment may involve multiple stakeholders.
- *Multiple stakeholders* have different perspectives and priorities regarding the development context, and will have views and experiences on risk assessment.
- *The development context* will be shaped by multiple stakeholders, whose perception may change through engagement in risk assessment.

This triangle of connections is illustrated in Figure 4.2

Figure 4.2: Methods to Improve the Sustainability of CBDRM - Stage 1



This research focuses on *components* of these subjects, as indicated in Table 4.1.

Table 4.1: Components of Subjects Investigated through the Research Objectives

Subject	Component of the subject focused on in this research
Risk assessment	Community risk assessment
Multiple stakeholders	Government[183]
Development context	Underlying causes of vulnerability relating to disaster risk

[183] Of all the stakeholders important to CBDRM, besides community members themselves, the role of the government has been singled out in literature, workshops and during fieldwork with communities far more frequently and with much more emphasis than any of the others (such as the private sector, NGOs, the media, the emergency services, the military, donor institutions or the UN). This justifies its inclusion although does not undermine the need for much more research regarding the links between CBDRM and other stakeholders (see Chapter 8).

The components of the three subjects and how they relate to sustainable CBDRM form the basis of the three research objectives (see Figure 4.3). This is because the sustainability and scale of CBDRM will be enhanced through:

- Linking CRA with CBDRM

  Research objective: To investigate the link between community risk assessment and community based disaster risk management

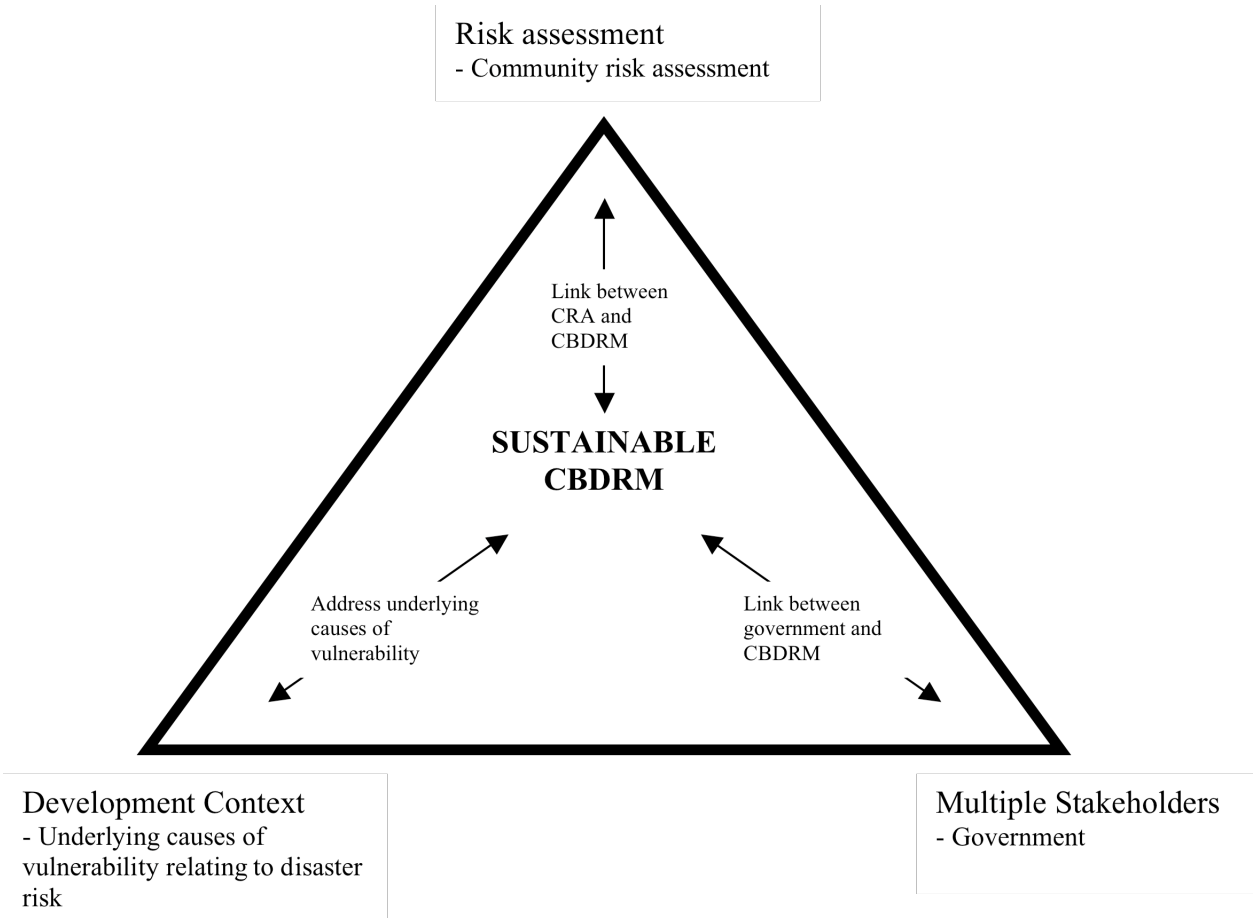
- Addressing the underlying causes of vulnerability within CBDRM

  Research objective: To identify key issues when addressing the underlying causes of vulnerability within CBDRM

- Linking government policy and practice with CBDRM

  Research objective: To identify challenges in enhancing the sustainability and scale of CBDRM through stakeholder partnership

Figure 4.3: Methods to Improve the Sustainability of CBDRM - Stage 2



4.4 Conclusion

This introduction to the data collection and analysis chapters has explained that the research objectives are important because they relate to both 'principles and practice' of CBDRM. The chapter has also demonstrated that they are inter-connected.

The next three chapters present the data collection and analysis itself. Each chapter addresses one of the three research objectives. Initially data is presented and subsequently, within the same chapter, the researcher's analysis of this data is included. The concluding chapter to the thesis (Chapter 8) will then draw on the data analysis of all three objectives, coupled with the existing state of knowledge (see Chapter 2), as it demonstrates how this research highlights methods of enhancing the sustainability and scale of CBDRM through CRA.

5 INVESTIGATING THE LINK BETWEEN COMMUNITY RISK ASSESSMENT AND COMMUNITY BASED DISASTER RISK MANAGEMENT

5.1 Introduction

This chapter is based on the research objective:
To investigate the link between community risk assessment (CRA) and community based disaster risk management (CBDRM).

The State of Knowledge chapter drew attention to the increased emphasis being given to the links between CRA and action planning (see Chapter 2.3.4). For example:

- [CRA] is an investigation that implies a commitment [to action] (IFRC, 2006, p.29).
- As a minimum, a [CRA] should lead to the design of a Community Based Disaster Preparedness Plan that engages local people in strategies to reduce their vulnerability to specific natural hazards (IFRC, 2006, p.33).
- Risk assessments are the basis for risk reduction strategies and preparedness planning, and should [also] be the foundation for development plans (UNEP and UN/ISDR, undated 2006 or 2007, p.19).

However in practice CRA is not systematically linked with action planning leading to implementation of DRR. Any sense of CRA being part of a CBDRM process relies on wishful thinking that it increases disaster risk awareness - and thus as a consequence risk-reducing actions will occur at some future undefined date, and perhaps supported by another agency. Enders (2001) explained that changes in behaviour are not based solely on knowledge and awareness. Other influences were described as being about attitudes to risk, experience of natural hazards, emergencies or disasters, the actual ability of local people to mitigate and prepare for future events through the availability of assets and resources, and demographic characteristics. This means that

CRA needs to be more *proactive* in its aspirations to improve conditions through CBDRM than is currently the case. For this to occur, assessment and action need to be synthesised.

This is a significant challenge, as it has been found that the vast majority of assessments to date are akin to 'data collection exercises' (Cannon et al., 2003). Wisner (2005) spoke on behalf of local community members who may have been subjected to such a process, and in doing so represented the general feelings of the expert CRA participants at the 'International Workshop on Community Risk Assessment'[184] when he said, "The reality of poor, marginal, and excluded people is that they have few surplus resources, time, or patience for assessment without action."

Referring back to the research undertaken on good practice CBDRM (see Chapter 4), risk assessment (and specifically here, CRA) is understood to be a principle of CBDRM *and* a practical application. However despite its importance, the literature and workshop proceedings have highlighted a gap in the 'Sustainable CBDRM Process' (see Figure 4.1) in reference to this subject: CRA *measures* (in other words examples) are weak because they do not adequately drive or support CBDRM.

In order to rectify this weakness, the State of Knowledge (see Chapter 2.3.4) explained that the starting point for sustainability in CBDRM lies in recognising and understanding the importance of the indigenous coping mechanisms of communities' vis-à-vis the impact of disasters (SEEDS, 2003; Shaw and Okazaki, 2003). In other words, risk assessment must place emphasis on capacities (Wisner, 2004, p.339). This research was therefore based on this premise. Consequently much of the data and its analysis revolve around the connection between local capacities and action planning.

5.2 Data Collection

The core research question that was answered, through practical CRA experience and semi-structured interviews was: What issues arise when linking CRA with action planning?

[184] Cape Town, 31 May – 2 June 2005

Responses have been grouped into three sections:

1. Issues raised by facilitators[185].
2. Issues raised by academics and practitioners.
3. Personal observations.

While the issues themselves were the key findings each is followed by a brief narrative that provides a representation of the data collected.

5.2.1 Issues raised by facilitators

People struggle to identify strengths and resources

People commonly struggled to identify positive aspects of life in their community[186]. They did not believe that much could be achieved to mitigate disasters in their own strength, as they were focused upon day-to-day activities expressed in ways that indicated 'survival' and a focus upon the lower tiers of Maslow's 'Hierarchy of Needs' (see Appendix F). Through strong CRA facilitation Mary Anderson suggested that, "People have been relieved to realise that they have been able to cope with disaster on account of their own strengths."[187] This is not a perspective that they are accustomed to consider. Therefore the identification of existing capacities that could be built on, as a strategy to address vulnerability, was challenging.

Community risk assessment raises expectations

The CRA process raised people's expectations that new resources were to be provided[188]. Therefore if the process was not linked to community based action planning, and was not expressed in these terms by external facilitators from the outset, then harm could be done to relationships with community members. Managing people's expectations was thus critical. An existing relationship based on trust and

[185] During the development and testing of the 'Participatory Assessment of Disaster Risk' tool that forms the basis of Tearfund's ROOTS 9 guidebook (Venton and Hansford, 2006). See Appendix X.
[186] For example, in response to the opening question during fieldwork, "What is **the best / most positive aspect** of living in this community?" and during "Capacity Assessment / Analysis" (see Appendix AA)
[187] Semi-structured interview, Cambridge, Massachusetts, 27 June 2006
[188] This was especially the case in a post-disaster context where communities had been exposed to high levels of humanitarian aid (for example, the fieldwork locations in Orissa – see Chapter 3.4.2 'Fieldwork in Gujarat and Orissa'). Also, the researcher was requested by DC staff not to join a CRA facilitation team in a community focus group meeting in Bihar, February 2006, for this very reason.

rapport between community members and external facilitators, was considered to be an appropriate starting point for CRA and CBDRM.

Community risk assessment changes the facilitators' perception of risk

Rather than a CRA process only leading to a change in perception, awareness or understanding of risk on the part of the community members, a change in the external facilitator's attitude could also occur. This was particularly evident during the 'CRA Development Feedback Workshops' in India (for example, see Appendix AF.1[189]). Thus the participatory CRA process can be a two-way reflective activity.

Vulnerability assessment should be segregated from capacity assessment

As these issues are at different ends of a conceptual and emotional spectrum it was considered helpful, in most instances, to separate them into different focus group sessions. Local groups and CRA facilitators found it difficult and confusing to switch rapidly from talking about weaknesses and problems (vulnerabilities) to strengths and opportunities (capacities). This perspective was first introduced in Gujarat (see Chapter 3.4.2[190]) and endorsed through the 'CRA Development Feedback Workshops' (see Appendices AE and AF). However care was required to ensure that any discussions on vulnerabilities and capacities that occurred in isolation from each other were not divorced from an overall awareness of vulnerable conditions and how they could be addressed. Thus any latter consideration of capacities was directed towards methods of overcoming priority vulnerabilities that had already been determined.

Disclosing capacities undermines the scale of external assistance

Community members frequently tried not to disclose their capacities, strengths and resources. People preferred to emphasise their vulnerability, weakness and poverty. For example, this was evident during a women's focus group meeting in Balakot, Pakistan, 11 May 2006 (see Appendix AG and Chapter 6.2.4[191]). This occurred

[189] Participants' feedback was structured with a series of questions, including: "What have you found out [through the facilitation of CRA] that you did not know before?"
[190] Section titled: 'Fieldwork in Gujarat and Orissa'
[191] Section titled: '*Some underlying causes of social vulnerability are exercised locally'*

because community members associated external facilitators with the provision of resources. If, as a community, group or household, they were able to paint a picture that emphasised their needs then this would most likely result in maximum levels of external assistance. Divulging capacities undermines this strategy.

5.2.2 Issues raised by academics and practitioners

The analysis of existing capacity must be robust

A strong process of capacity analysis is required where people's *existing* strengths and resources are identified, rather than a more common tendency for external facilitators to identify needs and areas where *additional* new capacities are required through capacity building. In the opinion of Mary Anderson[192], 'capacity building' implies that an external group decides that people have a lack of capacity and decides what capacities are needed, and then builds them. 'Capacity analysis', on the other hand, tries to identify existing capacities. These can then be supported and not undermined. This approach relies on strong facilitation. When this is achieved people have been relieved to realise that they have been able to cope with disaster, and other risks, on account of their own strengths. This is a refreshing experience because it is in stark contrast with a poorly devised and implemented needs-based assessment that inevitably focuses on the negative.

A robust analysis of capacity could be expanded to explore the reasons for the capacities. Thus measures could be developed to ensure that these are supported and not undermined.

Outside agencies romanticise local capacities

Linking capacities with action planning is a natural step. People utilise the resources they have available so as to carry out desired actions[193]. However, to reduce priority risks in an emergency or crisis, people's 'capacities' can become 'survival strategies'. Out of desperation, a household or individuals' risk reduction strategy may then have little alternative other than to take the form of prostitution, crime or other activities

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[192] Semi-structured interview, Cambridge, Massachusetts, 27 June 2006
[193] A similar concept to the sustainable livelihoods framework

that are not normally acknowledged or discussed within typical capacity assessment / analyses. Such activities, which are damaging to health (through HIV / AIDS for example) and illegal, are highly unlikely to be endorsed by an NGO for example. But investigations into capacities in the context of disaster risk can often ignore or neglect an awareness of these issues[194]. As such they could be considered as naïve, being limited to an investigation of 'romanticised' issues such as the gathering of wild foods and other activities appropriate for capacity building programmes while ignoring the way in which some groups actually cope.

Disaster risk management should be lodged within community based organisations
By integrating disaster risk management functions within existing community groups, committees or organisations (CBOs), not only does the community benefit from trained individuals able to protect members of the community in the face of disaster, but also the arrangement is lodged within a familiar structure that has longevity and a year-round function. This was the approach adopted in the primary fieldwork location. A stand-alone team of disaster response volunteers, by contrast, can become obsolete for much of the time and consequently members lose their motivation and commitment. This was the experience of the Philippines National Red Cross (see Appendix AM.3)[195]. A CBO is also well placed to represent the needs of the community to others, including in an emergency (see Appendix B.6), and can coordinate with other groups when necessary for greatest effectiveness.

The way in which disaster risk management can be integrated within CBOs is through training, which through its adaptability to different circumstances can lead to the sustainable strengthening of community resilience in general terms[196].

[194] This was apparent through feedback on capacity assessment and analysis during fieldwork, and based on the experience of practitioners attending the 'Social Vulnerability and Capacity Analysis Workshop' and the 'International Workshop on Community Risk Assessment'.
[195] Regular training of 'disaster preparedness' volunteers was required to maintain interest, enthusiasm and competence
[196] Personal communication with Professor Ian Davis, summer 2007

The entry points for community based disaster risk management are unknown at the outset

CBDRM is not necessarily a priority for local communities, unless it occurs in the aftermath of a recent experience of disaster. Instigating CBDRM under 'normal' conditions should therefore be based upon existing needs and priorities. In this sense the process of CRA and CBDRM is integrated within developmental activities by exploring links between disaster risk and health education, for example. Approaches can then be expanded to include CBDRM dimensions. This has the advantage of building on existing relationships. However the entry point for CBDRM cannot in this way be prescribed beforehand, and it cannot be approached directly[197].

The Problem Tree is a tool that can aid action planning

Although not used systematically in CRA for this purpose, the 'Problem Tree' (see Appendix AR) can help identify and analyse priority vulnerabilities and then provide a basis for determining short, medium and long-term measures to address these. The 'Problem Tree' formed the basis of facilitators' presentations at the 'CRA Development Feedback Workshop' (see Appendix AE.4).

Action planning naturally emerges from a community risk assessment process

The most common perspective on the link between CRA and action planning was that through a CRA process specific risk reducing measures naturally emerge. No specific tools or techniques are required or typically used. For example, representing the views of several other practitioners, Rosalinda 'Maan' Tablang (Citizens' Disaster Response Network) stated, "Upon completion of Hazard Vulnerability and Capacity Assessment the People's Organisations are naturally able to identify activities that are considered appropriate"[198] (see Appendix AM.3).

Local governments have preconceived notions regarding necessary actions

Local government officials that engage in CBDRM are prone to have preconceived ideas regarding the type of interventions they are willing to make. There is little or no

[197] Predominantly based upon the views of Dr Peter Walker, semi-structured interview, Medford, Massachusetts, 26 June 2006

[198] Semi-structured interview, Manila, 6 April 2005

scope for an analysis of priorities to be discussed. If a disagreement in desired actions occurs, those with the most influence will win the debate. An example is provided through the words of Paul Pagaran (Philippines National Red Cross) in response to the question: "What happens if there is a difference in opinion?" He stated that, "A Barangay assembly meeting is held, but in reality those with the most influence win the debate. The Local Government Unit (LGU) officials are involved in the funding of actions (normally structural and highly visible) and hence the Philippines National Red Cross Society has to try and influence LGU decisions / thinking. In reality the LGU often has preconceived ideas of what they wish to do, and only when the community plan fits theirs will action occur"[199] (see Appendix AM.3).

Introduce ideas for low cost mitigation measures

In order to demonstrate a connection between CRA and CBDRM and encourage locally based actions, the introduction of ideas for some low cost mitigation measures were recommended for presentation to community members. Such examples would be based on a brief process of preliminary analysis by external facilitators based on the findings of a CRA[200]. Semi-structured interviews in the Philippines were specific in considering this issue (see Appendix AM.3 and Chapter 3.4.4[201]).

5.2.3 Personal observations

Data collection is over-emphasised

The function of CRA frequently placed greater emphasis on the collection of data over the analysis of conditions with local groups (see Appendices AB and AC). However it is in the analysis that progress is made towards CBDRM. Predominantly this appeared to occur on account of two reasons: data collection is easier than data analysis, particularly when the process is participatory; and CRA is perceived as an

[199] Semi-structured interview, Manila, 11 April 2005

[200] The examples of potential low cost measures discussed included: the creation of clean areas, improved sanitation facilities, early warning systems (such as tying tin cans or bells on string across a tributary to warn of rising water levels), evacuation planning, sandbags (for flood), low cost bridges, low cost boats, ropes (for safety lines), and torches.

[201] Described within the section 'The Philippines', one of the objectives of the semi-structured interviewing here was, 'To observe how local disaster management plans have been used practically and effectively, and collect any examples of simple, low cost mitigation or preparedness measures'.

end in itself and not linked with action planning, and therefore under such circumstances analysis can appear less important.

The Release Model can aid action planning

The 'Release Model' (Wisner et al., 2004) (see Appendix AS) was used as a template for discussing action planning[202]. This proved to be a useful approach to demonstrate the importance of multi-stakeholder partnerships and advocacy to support local CBDRM measures (particularly on account of the need to address 'dynamic pressures' and 'underlying causes of vulnerability').

Lack of stakeholder participation in decision-making

Aspirations for CBDRM are highly localised and rarely relate to the context in which risk can be generated. This can result in small-scale aims for action planning, and thus a lack of the need for efforts to engage with others beyond the spatial limits of the target community (which is predominantly defined by exposure to natural hazards).

Demonstrating local community based disaster risk management capability as a strategy to entice other stakeholders

A tendency among government officials to assume that local communities are incapable of addressing and reducing their vulnerability to disaster risks without external assistance[203] creates a dilemma regarding strategies to engage with these and other stakeholders. This is because there can be a reluctance to treat local communities as partners (see Chapter 7.2.2). An initial demonstration of CBDRM capability is sometimes deployed as a strategy to address this.

Developmental action planning may be considered inappropriate by humanitarian facilitators

Due to the low priority of DRR, CRA is often undertaken in a post-disaster context (as opposed to pre-disaster), and hence is often facilitated by humanitarian-minded practitioners. However sustainable CBDRM is a developmental concept and needs to

[202] This was only undertaken in training workshops, and not in the field

[203] Closely connected with a commonly held assumption that vulnerability reduction requires structural mitigation measures on a significant scale to control the natural hazard itself

be integrated within the context of local people's needs and developmental aspirations. Participatory CRA is designed to achieve this. Consequently even in the hands of a humanitarian practitioner (who may have a short-term perspective) a CRA process can lead community members towards the identification of actions that are not directly focused on disasters, such as first aid training or the development of an early warning system, but instead are development based, such as improved access to safe drinking water. The subtle connection between disasters, development and risk can lead humanitarian-minded facilitators to consider development-based actions prioritised by community members as the 'wrong' type of ideas.

Undermining of local capacities in a post-disaster context

The development of CBDRM measures that build on existing capacities is especially hard to achieve in a post-disaster context. This is due to the frequent undermining of local capacities as a consequence of the adopted relief strategies and the creation of a culture of dependence on external support. External agencies must carry much of the responsibility for the creation and maintenance of this negative passive dependency.

5.3 Data Analysis

The analysis of these findings has been segregated into two component parts. The first summarises the obstacles faced by a facilitator linking CRA with CBDRM, whereas the second considers how these obstacles could be addressed.

5.3.1 What are the obstacles linking community risk assessment with community based disaster risk management?

Some of the obstacles that a CRA facilitator may need to address specifically in order to link CRA with CBDRM include:

- The reluctance of community members to disclose their capacities to an external facilitator / group due to a belief that this will diminish the provision of any resources.
- People's common inability to recognise that they have skills and abilities within the context of disasters.
- Unrealistic expectations regarding the actions that will arise from the CRA.

- The identification of actions not directly related to disasters.
- Preconceived ideas among stakeholders regarding desired community-based actions.
- Complexity regarding numerous potential alternatives that are unknown prior to the beginning of the process.
- A context where local capacities have been undermined (particularly in a post-disaster context).

Other more generic issues that a CRA facilitator needs to address that may affect the linking of CRA with CBDRM are described in Chapter 6.3.1. These cover the subjects of:

- A fatalistic attitude regarding the prevailing conditions, hindering enthusiasm to engage in CBDRM.
- Different perceptions of risk among stakeholders.
- The unwillingness to commit to CBDRM and participate in what is perceived to be a 'data collection exercise'.

The preceding obstacles identified above go some way in explaining why the last obstacle, regarding CRA as a 'data collection exercise, is commonplace. Data collection on vulnerabilities and capacities is more straightforward and easier to accomplish than a participatory analysis of conditions leading towards action planning. And, where action planning *has* followed a CRA exercise, the obstacles above also provide an explanation regarding why certain community-based actions may have been selected for implementation. Commonly this is suggested to be because a 'capacity building programme' approach has been adopted (rather than an open-ended capacity analysis investigation) as this better enables preconceived ideas to be implemented.

However the data did highlight that a CRA process, even if undertaken with a preconceived idea regarding its findings and the CBDRM measures likely to be required, can often change the understanding, perspective and even mindset of the *facilitator* as well as the participants from the local community. This process

characteristic is therefore capable of redirecting the course of action that it is imagined a CRA will take.

5.3.2 How can the obstacles to linking community risk assessment with community based disaster risk management be addressed?

Design community risk assessment as action planning orientated from the outset

The manner in which a facilitator undertakes CRA is a function of this person's understanding and commitment towards its aims. However, commonly an assessment is considered to be a discrete operation with a start and finish and an outcome that is demonstrated through the presentation of findings. The analysis function of CRA can be misunderstood, under-valued or possibly even ignored. If action planning is recognised as the aim of the process and articulated to all stakeholders at the outset this influences all stages in its implementation, including preparation, hazard, vulnerability and capacity assessments and analyses, and interviews and meetings with stakeholders. In this way action planning is not the just the final step in the process, but integrated through all steps as a form of motivation aiding the direction of proceedings.

Link capacity assessment and analysis with action planning

The obstacles encountered by facilitators seeking to explore local capacities, such as a reluctance for local community members to divulge existing strengths, abilities and ways to cope with disaster risks or a lack of awareness regarding what these strengths may be, can be addressed by linking capacity assessment more directly with action planning itself. This requires that vulnerability assessment be undertaken as a separate component, as far as is possible[204], in the CRA process (which was identified as having some benefits in itself). The identification of local capacities under this approach then seeks to identify how priority vulnerabilities can be reduced based on existing strengths and resources.

[204] The CRA process requires structure, but must not be rigid in its sequencing. It needs to be based on skilled facilitation that allows for the natural discussion and analysis of issues as they arise.

Emphasise analysis

To improve connectivity with local stakeholders: Through the provision of appropriate levels of analysis of the data collected on vulnerabilities and capacities through CRA, the process is more likely to achieve sustainability on account of its connectivity with the priorities of the local stakeholders. However, this process of analysis is not likely to be straightforward. It will require the processing of significant levels of information and the amalgamation of different perspectives on the issues raised. Furthermore, the likely outcomes of a process that values the analysis function cannot be prescribed beforehand. As noted earlier, flexibility is required.

To enhance non-structural mitigation: Structural mitigation can often be emphasised over non-structural measures. This may be due to its visibility, which is helpful for stakeholders needing to demonstrate a tangible outcome of a process that could be time consuming and human resource dependent. Structural mitigation also appears more relevant to the 'dominant approach' to disaster risk management (see Chapters 2.2.5 and 7.3.1). This undervalues the process of CRA in raising awareness, changing perceptions of risk and leading to non-structural mitigation as well as structural. Increased attention on analysis of data shifts this balance so as to improve the value placed on non-structural measures.

Utilising tools for analysis: Common practice is for CRA to 'naturally' point towards the development of a set of appropriate actions without the specific use of any analysis tools to aid this transition. This approach may be appropriate if the CRA process is facilitated skilfully and without bias. However, in most circumstances there are several obstacles, as described already, hindering the development of CBDRM based on a CRA process. The use of the 'Problem Tree' could be one method, at a local community level, to aid the participatory analysis of different perspectives (see Appendix AR). Likewise, the 'Release Model' (Wisner et al., 2004) has similar cause and effect properties[205] (see Appendix AS). The use of tools such as these also helps to ensure that action planning is based on identified priority vulnerabilities, as they can be used for this function beforehand.

[205] And would be appropriate in follow-up to an assessment based on the 'Crunch Model'

Ensure community based organisation ownership

The sustainability of CBDRM is dependent on the local ownership of the process. This is a principle that is applicable in all contexts. As a consequence the role of local community members in the CRA process and its development of action planning is crucial. A focus on developing a group of trained volunteers to carry out disaster-specific activities is not sustainable if there is no disaster within a relatively short time period. It requires regular external training inputs and possibly other forms of resourcing. Alternatively, integrating disaster mitigation and preparedness within the normal activities of a CBO can help to embed CBDRM within existing local systems, procedures, relationships and development goals. CBO members should therefore play an active role in the CRA process.

Improve stakeholder participation in decision-making

CBDRM can frequently occur on a very localised level within a specific community. If it is hoped that CBDRM can be supported through some external resourcing, particularly by local governments, then this is often approached by firstly demonstrating activities that local communities have already undertaken on an independent basis. Whilst this is positive in terms of opening up opportunities with the potential to help change attitudes among the more powerful and resource-rich (perhaps local government officials), it diminishes the potential for reaching a shared risk reduction goal (based on an appreciation and awareness of others' perceptions of risk and remedial actions), which is all-important for sustainability. Therefore the earliest engagement of a wide cross-section of local stakeholders in the CRA process should be an aspiration.

Advocate for reduction in the underlying causes of vulnerability

Although risk is experienced locally, it can be created and sustained through the influence of actors outside the local sphere of influence, and hence the underlying causes of vulnerability are often beyond the means of local communities to address (see Chapter 6). CBDRM is therefore only able to achieve limited success in reducing risk when confined to addressing vulnerabilities through local measures alone. CRA has normally only sought to identify vulnerabilities and capacities locally, and so such

an approach is not conducive to the analysis of risk as a whole. Any CBDRM emerging from such an investigation operates in a state of a degree of ignorance. However, a CRA process that also investigates the underlying causes of vulnerability, as was the case in this research (see Chapter 6), exposes areas expanded from the confines of a local community where relief, recovery or development policy also requires the integration of risk reduction strategies in support of CBDRM. If this is true, then CRA implies a link with advocacy so as to help accomplish this. This could be undertaken by the facilitator (or their agency) or, more realistically, in partnership with other organisations.

5.4 Conclusion

The State of Knowledge chapter highlighted that despite the importance of risk assessment, and particularly for this research the community's participation in this type of assessment, insufficient connections are being made between CRA and CBDRM (see Chapter 2.3.4). In practice CRA is not necessarily based on the premise that it leads to the reduction of risk. Indeed, it may even create problems that were not there beforehand through the raising of people's expectations and by taking up people's precious time. Therefore CRA needs to be more *proactive* in its aspirations to improve conditions through CBDRM than is currently the case. Ideally this will result in a single integrated process of assessment / analysis / planning / implementation and monitoring.

The research identified several issues of importance regarding links between CRA and CBDRM, which in particular emphasise the important function of *capacity analysis*.

5.4.1 Summary of gaps in knowledge addressed by this research

- Development of a CRA tool that incorporates an explicit link between assessment and action planning[206].
- The identification of *nineteen key issues* when linking CRA with action planning (see Chapter 5.2).

[206] 'Participatory Assessment of Disaster Risk' (Venton and Hansford, 2006)

- The development of *seven specific obstacles*[207] a CRA facilitator may need to address when linking CRA with CBDRM (see Chapter 5.3.1).
- The development of *six recommendations* regarding how the obstacles in linking CRA with CBDRM can be addressed (see Chapter 5.3.2).

Other issues of relevance that this research has identified include:

- Local capacities, and their analysis, are the starting point in action planning that seeks to reduce vulnerability.

[207] And a further three more generic obstacles

6 KEY ISSUES ADDRESSING THE UNDERLYING CAUSES OF VULNERABILITY WITHIN COMMUNITY BASED DISASTER RISK MANAGEMENT

6.1 Introduction

This chapter is based on the research objective:
To identify key issues when addressing the underlying causes of vulnerability within community based disaster risk management (CBDRM).

The State of Knowledge chapter drew attention to the fact that *theory* has reached the stage where the inter-connectedness of vulnerability and its causes is acknowledged. But there are calls for *practical assessments* to reflect our understanding about the "underlying social and political factors that make some groups particularly vulnerable" (Buchanan-Smith and Christoplos, 2004).

However according to Buckle et al. (2003, p.83) this has not happened. He states, "No one…has developed…analytical frameworks or models…that have managed to deal with the complex interactions of daily life, risk management, and disaster management in ways which *allow for the linkage and integration of these issues between individual, group, community and system levels."*[208] Dr Mark Pelling responded to this issue at the 'Social Vulnerability and Capacity Assessment Workshop' in Geneva (May 2004) when he said, "We need to move from a 'surface' analysis of risk and into the areas where these conditions are created". This was also the opinion of Trujillo et al. (2000, p.30) with reference to experience in Latin America. They identified a need "for tools which could influence decision makers and direct their policies, and which might help to solve the underlying problems."

[208] Author's use of italics to highlight key aspects of Buckle et al. (2003)

A CRA methodology responding to this challenge, by seeking to identify the underlying causes of vulnerability based upon the perspective of those 'at risk', would be positioned to expand from being a local-level exercise to a tool that crosses an invisible but very influential boundary into the realm of policy. But the State of Knowledge chapter highlighted some of the reasons why this has yet to become good practice in CRA (see Chapter 2.2.2). In particular, regarding local and macro level scales, "complexity dictates that there can be no general theory and therefore no simple solutions" (Bankoff, 2004). In practice, as will be seen, there are other reasons why investigating the underlying causes of vulnerability and addressing them within CBDRM is a challenge.

Research into addressing the underlying causes of vulnerability within CBDRM was primarily based on the researcher's development and testing of a CRA tool (Venton and Hansford, 2006). This tool utilised a framework based on the Crunch Model's 'progression of vulnerability' (Wisner et al., 2004). Semi-structured interviews and personal observations were also used.

6.2 Data Collection

The data related to addressing the underlying causes of vulnerability within CBDRM is grouped into four sections:

1. Issues raised by communities.
2. Issues raised by facilitators[209].
3. Issues raised by other stakeholders (including government officials).
4. Personal observations.

While the issues themselves were the key findings each is followed by a brief narrative that provides a representation of the data collected.

[209] During the development and testing of the 'Participatory Assessment of Disaster Risk' tool that forms the basis of Tearfund's ROOTS 9 guidebook (Venton and Hansford, 2006). See Appendix X.

6.2.1 Issues raised by communities

Fatalistic attitudes lead people to believe disasters are acts of God

When discussing the underlying causes of vulnerability, people affected by disaster often made a strong correlation between disasters, poverty and God's will. This was especially evident among those deemed to be in the lowest tier of social hierarchies. Issues associated with poverty and vulnerability, such as landlessness, were expressed within this fatalistic context where it was felt that little progress could be made to improve conditions. There was a sense of resignation that little or nothing would change, and so little or nothing could be done to mitigate disaster impacts. The men in Lavatola and Godhiara villages in Bihar for instance stated, "Unless you work, God won't listen. God listens to those who work. Therefore if you can't find work then God won't listen. Flood comes because God is angry." Or in Banda Aceh it was stated that the Indian Ocean tsunami was an act of God because of conflict at the national level and within the community itself, plus corruption and inequality between the rich and poor.

Poor governance and lack of trust in government hinders community based disaster risk management

The root causes of disasters were, if not an act of God often linked to issues around poor governance, which hinders CBDRM. There was a particular lack of trust in government officials, who hold positions of power and influence. For example, a commonly held opinion was that government officials are only seen during election times, whereas during a flood (or other 'disaster' considered the hardest period of the year) they are accused of siphoning off relief funds. To counteract such suspicion the intervention of an 'outside' facilitator was considered to be an option better suited to maintaining a fair and equitable CBDRM process.

Perceptions on the causes of disasters are divergent

Those exposed to the risk of disaster have a perspective on its causes that can be divergent from scientific, technical or other external perspectives. For example in Bihar the building and heightening of embankments was often cited as correlating with an increase in flood duration, due to increased water logging. Local populations

thus possess polar opposite views to government officials on the use of embankments as a method to mitigate flood impact[210].

A lack of participation in development decision-making limits opportunities to address the underlying causes of vulnerability

Social exclusion provided a context where the underlying causes of vulnerability could remain unchallenged. This was evident by the fact that local populations felt unconnected with the development decision-making processes. Their opinions were not sought[211].

Preconceived ideas limit the effectiveness of the process

The lack of engagement in comprehensive risk assessment and analysis utilising technical expertise resulted in the adoption of preconceived 'popular' ideas regarding the underlying causes of vulnerability. This impacts the effectiveness of resultant CBDRM measures. For example in Bihar issues of social vulnerability were overlooked as blame regarding the amount of water entering Bihar was pinned on the release of water from Nepalese dams. The significance of such cross-border influence was, in reality, not known or based on conjecture. Also, in the Philippines, a Buklod Tao member stated, "The flooding is getting worse because there are no trees in the mountains, so the soil can not hold the water."[212]

Local options can address some underlying causes of vulnerability

Not all underlying causes of vulnerability are due to forces spatially removed from local communities, which has clear direct implications for the development of localised CBDRM. For example on account of social norms, landowners (of higher caste) have commonly made it difficult for the landless (of lower caste) in Bihar to safely evacuate floodwaters by crossing their land to safe areas. However in a meeting

[210] Major flood events occurred in 1974, 1975 and 1987, which coincided with the building and heightening of embankments in the vicinity. Other significant floods were cited as being in 2000, 2002 and 2004.

[211] The men in a focus group meeting in Lavatola and Godhiara villages in Bihar on 25 March 2004 expressed that the government did not talk to them before building the embankments. But if they were asked now by the government what they should do, "We would tell them to break down the embankments".

[212] In this instance reference was also made to the lack of financial capacity to buy higher land, and to the role that mining is having on the flood characteristics of the area.

with three landowners[213] their role in supporting an initiative to build a raised path that could act as an evacuation route across their land when needed was highlighted. With reference to an explanation of the 'Crunch Model' they recognised their position as potential 'dynamic pressures'. But through this particular initiative they felt they were reversing the pressures (as per the 'Release Model') to improve the safety of the landless, now entitled to cross their land.

6.2.2 Issues raised by facilitators

Assessing the underlying causes of vulnerability enhances links with development

The expansion of CRA to include the underlying causes of vulnerability helped to place disasters within a development context conducive to the integration of sustainable CBDRM. The process encouraged facilitators to engage with communities and key informants on issues that went beyond the symptoms of disaster. This approach suited the concept of long-term risk reduction within developmental processes rather than short-term solutions in response to disaster impacts. As a result new perspectives and understanding by practitioners regarding the people they work with emerged.

Assessing the underlying causes of vulnerability requires a commitment to advocacy

The identification of the underlying causes of vulnerability through a CRA process led facilitators towards an awareness of the community's need for additional CBDRM support through advocacy. This was because not all issues raised by communities could be addressed within the context of their own capacities. For example a Block-level forum for dialogue on flood management with community representatives, local government officials and NGOs was set up in Bihar. Tentative plans were also drawn up for a cross-border river-basin advocacy campaign, in appreciation of the up-stream impacts on downstream communities. This would be based on the collective findings of CRA processes in selected locations of a river basin, with emphasis on the underlying causes of vulnerability. Again wider partnership to address emerging topics was a natural strategy stemming from the investigation.

[213] Semi-structured interview with M.W. Ashraf, Shriman Nayaran Singh, and Vipim Kumar Singh, Dharbanga Town, 29 March 2004

However such a response, although clear in its necessity, was not normally met with enthusiasm. Advocacy by the facilitators operating at a local level calls on the exercising of different skills in unfamiliar forums. On account of local facilitators knowing the cultural and political environment there was also a tendency for facilitators to under estimate the potential for change (similar to the fatalistic attitude sometimes expressed by those they worked with at a local level). In general terms advocacy was also viewed as being confrontational, and thus highly demanding. This raised concerns that were exacerbated by the relative unfamiliarity of the DRR concept, in comparison with a sectoral expertise.

Assessing the underlying causes of vulnerability raises expectations

Without CRA being part of a long-term agenda for change through sustained CBDRM, the investigation into the underlying causes of vulnerability was capable of raising expectations to unrealistic levels by focusing attention on macro-level systems and influences well beyond the capacity of a community to address independently. People's expectations were noticeably higher in areas that have been recently exposed to disaster and international humanitarian assistance, such as in Orissa after the super-cyclone (October 1999) or northern Pakistan after the earthquake (October 2005). In a post-disaster context sustainable CBDRM principles "will have to undo the bad habits that began during the relief phase"[214].

Dynamic pressures are difficult to conceptualise

Difficulties emerged for facilitators in comprehending 'dynamic pressures', limiting the opportunity to develop multi-stakeholder partnerships among key local institutions with detrimental effects on programme sustainability. 'Structures' and 'processes' were considered too abstract for fieldworkers. Thus these categories were described[215] as representing 'who' is influencing the creation of unsafe conditions (structures) and 'how' (processes). However adjustments in the terminology met with limited

[214] Ed Brown, Shelter For Life at Disaster Risk Reduction Workshop, 9 – 13 May 2006, Peshawar, Pakistan

[215] In the development of the CRA tool 'Participatory Assessment of Disaster Risk' (Venton and Hansford, 2006)

improvements in understanding. By contrast facilitators grasped 'unsafe conditions' and 'underlying causes of vulnerability' as concepts at either end of the 'progression of vulnerability'. And through the capturing of key informant opinion, skilled facilitators were able to make some progress analysing the influence of dynamic pressures.

The Problem Tree's conceptual similarity to the Crunch Model aids analysis

The conceptual cause-and-effect similarities between the 'Crunch Model' (see Figure 2.3) and the widely recognised and used 'Problem Tree' (see Appendix AR) resulted in the latter being used as an analysis tool capable of investigating the underlying causes of vulnerability. The 'Problem Tree' therefore supplemented the use of the 'Crunch Model', which remained the over-arching framework. This was achieved by prioritising an 'element at risk' (e.g. a 'kutcha'[216] house on a floodplain) and then considering the effects of the damage or loss of this as the branches, and the reasons why it is at risk as the roots of the tree. Thus the roots were represented by the 'progression of vulnerability', from unsafe conditions to underlying causes.

Religious beliefs have a profound impact on social vulnerability

The role religion can play in the generation of social vulnerability and poverty or conversely in its abatement through CBDRM was considered to be profound[217]. The underlying causes of vulnerability were thought of as being linked with issues of equity and justice, and belief systems influence the reaction to conclusions of this nature. However the underlying causes of vulnerability are described within the 'Crunch Model' as being associated with limited access to power, structures and resources, and in connection with ideologies in terms of political and economic systems. The spiritual context is not explicit in this, and yet was often felt to be at the root of any apathy encountered (or in some cases action).

[216] Basic 'non-engineered' structure typically made from mud, thatch and bamboo and possibly with a tin roof

[217] This may be due to the Christian faith basis of the NGOs acting as research partners

Fear regarding the possible implications of discussing sensitive issues hinders dialogue

Endeavours to develop comprehensive CBDRM capable of removing pressures that help sustain the vulnerability status quo (in other words, unsafe conditions) were undermined by people's reluctance to discuss sensitive issues. This was particularly the case when underlying causes of vulnerability were explored among the more vulnerable social groups in relation to people who had power and influence over them. This was on account of fear, especially among women, regarding the ramifications of exposing such opinions.

Widely known participatory tools are capable aids in analysis

The participatory principles of CRA and CBDRM needed to be expanded from more typical usage to explore deeper-rooted issues. The tools and techniques, such as social mapping, seasonal calendars, time lines, Venn diagrams and ranking matrices, proved to be capable in this investigation.

Short timeframes are inappropriate to address underlying causes of vulnerability

The feasibility of NGOs advocating for non-structural adjustments to achieve vulnerability reduction through CBDRM is diminished due to the short time frames in which they operate[218]. As a result there was a tendency for CBDRM activities to focus attention on structural measures that could be built quickly and appeared to offer a reduction in the level of disaster risk a community was exposed to[219] (see Chapter 5.3.2).

6.2.3 Issues raised by other stakeholders

Governments emphasise hazard control rather than vulnerability reduction

Whereas CBDRM emphasises social vulnerability, which can be expanded to encompass a reduction in the underlying causes of vulnerability, the government commonly perceives the hazard itself to be at the root of the problem (see Chapter 7.2.2). Consequently remedial actions are dominated by the desire for structural

[218] Probably on account of donor funding

[219] For example, raised platforms for flood-prone areas and the weighting down of roofs with tyres in cyclone-prone areas

solutions to better control hazards (for example in India, flood control embankments, dams[220], and the vast plan by the Ministry of Water to connect all the sub-continents rivers). Within this perspective, the provision of relief assistance appears the only viable option in the face of a hazard. However both these approaches are set within a system starved of resources in both human and financial terms.

The bias in Bihar to attempt to control the hazard itself through structural means filters through all levels (see Table 6.1).

Table 6.1: The Dominant Approach to Disaster Reduction in Bihar

Level	Position	Statement
Panchayat	Mukhiya[221]	"The government does lots of planning, but insufficient action. The government needs to create more embankments."
Block	Block Development Officer[222]	"The government of Bihar does not have adequate funding [and does] not have the technology to control the flood. The flood has many causes, including Nepal. Need to make a dam to stop the flooding but don't have enough resources – need adequate financial assistance."
	Block Development Officer[223]	"If Nepal built check dams so as to control the release of water then Bihar would stand a chance of coping. In lieu of this the Disaster Management approach[224] tries to minimise the impact of the flood. Therefore a raised platform is being built (2,000 sq feet), but each Panchayat would need two of these. The government feels that there is no other option than to channel the water between embankments, and as the river silts there is a need to constantly maintain, heighten, strengthen and mend them."

[220] Including in Nepal
[221] Semi-structured interview, Dharbanga Town, Bihar, 25 March 2004
[222] Semi-structured interview, Dharbanga Town, Bihar, 27 March 2004

Level	Position	Statement
State Government	Secretary, Disaster Management Department[225]	"I do not want to be drawn on the debate [about the embankments]. The embankments are the responsibility of the Irrigation Department and are not [the Disaster Management Department's] concern [which is the provision of relief[226]]."

The scale of the problem can seem insurmountable

High levels of poverty: Reducing social vulnerability, let alone the underlying causes of vulnerability, through local CBDRM exercises was in principle commended and given a relatively high priority, but was set against even more substantial concerns. For example, the problems facing Bihar were expressed as being unemployment (agriculture provides only 3 or 4 months employment per year and there are a lack of alternatives), a lack of education, a lack of infrastructure, and the weak social and economic status of the people[227]. Unless there is an influx of investment and a flow of resources into Bihar, then poverty, it was felt, will continue to be accepted as the norm.

The heavy toll of corruption: Any investment and resources that could benefit the most vulnerable and poor members of society are rendered less effective because corruption is engrained in society from top to bottom. The consequence of this according to a Panchayat Pradhan[228] is that, "Those that are rich get richer, and those without get nothing". This is applicable to the flood scenario. In the words of a Block Development Officer[229], "There is a 3rd crop, a relief crop" for those with power over the distribution of the relief resources.

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[223] Semi-structured interview, Dharbanga Town, Bihar, 27 February 2006
[224] The Disaster Relief and Rehabilitation Department was renamed the Disaster Management Department
[225] Semi-structured interview, Patna, Bihar, 1 March 2006
[226] Emphasising the scale of the need for relief and the preoccupation with this annual cycle, the Secretary even stated, "Poverty is not my interest".
[227] 60-70% of the population are landless but the wealthiest own 20,000 acres
[228] Semi-structured interview with the Mukhiya for Ojhaul Panchayat, Mohammed Safdar Imam, Dharbanga Town, Bihar, 27 February 2006
[229] Semi-structured interview with Naresh Jha, Dharbanga Town, Bihar, 27 February 2006

Poverty and vulnerability alleviation was therefore expressed in terms of its futility against some substantial challenges. This leaves huge numbers of people living in conditions of exposure and susceptibility to flooding, and other hazards, with a reticent government administration offering limited relief assistance. This perspective is summarised by the acknowledgement that millions of people get inundated by floodwaters annually (21 million people were affected by flooding in northern Bihar in July 2004) and need to be temporarily re-housed. But, "we can not move everyone to a safe area, everywhere is flooded.[230]"

How local communities perceive macro-level issues needs to be understood[231]

Local people may frame their understanding of the underlying causes of vulnerability in terms of their traditional patterns and systems of doing something, with implications regarding the way in which CBDRM initiatives are designed. As a result of the effects of the cause of vulnerability, land tenure, for example, may no longer match with the land that is needed so as to be able to raise and sell cattle. Thus poverty and vulnerability may be exacerbated. The role of macro influences in this, such as climate change or the impact of the 'World Trade Agreement' that could more typically be described as underlying causes, does not form the basis of local analysis. Therefore in order to determine points of entry or leverage to affect changes in the level of vulnerability faced by a community, the traditional patterns and systems at work within that local context need to be understood as a starting point. However, when there is not one clear prioritised threat facing a community, such as flooding in Bihar, the system, and consequently the analysis of it, becomes more complex.

A disaster preparedness focus requires a less comprehensive analysis of risk

In practice there is a tendency for CBDRM to emphasise disaster preparedness measures over long-term vulnerability reduction based on an acknowledgement by the facilitating agency of what is considered to be a realistic goal. Thus exposing the underlying causes of vulnerability, which when linked with development processes and advocacy has long-term social change aspirations, is not necessary.

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[230] Semi-structured interview with Naresh Jha, Dharbanga Town, Bihar, 27 February 2006

[231] Predominantly based on semi-structured interview with Peter Walker, Medford, Massachusetts, 26 June 2006

6.2.4 Personal observations

The inappropriate use of facilitation guideline questions limits effectiveness

Whereas analysing the underlying causes of vulnerability and how they could be addressed in CBDRM requires a skilful, flexible and context specific approach to the facilitation of the CRA process, facilitators tended to use generic guideline questions provided in the CRA tool (see Appendix X). This indicated a lack of interest or appreciation in the goal of CRA. Consequently some enquiries into the underlying causes of vulnerability tended to be superficial, lacking in natural progression, and irrelevant to any meaningful desire to address issues raised. By contrast, grasping the sense of the guideline questions, it was intended that facilitators would develop their own method of assessment and analysis based on the local context.

Trust and rapport are the basis of a community risk assessment and community based disaster risk management process

The investigations into the underlying causes of vulnerability through the CRA process were made, wherever possible, in communities where the NGO had developed a strong rapport with community members and had a commitment to help implement emerging CBDRM measures. This was primarily on account of the potential sensitivity of issues likely to be discussed and the inappropriateness of 'outsiders' asking leading questions and expecting to receive meaningful answers. The existing personal relationships between community members and the facilitating agency enhanced the level of accountability and trust. This environment was conducive to the generation of rich material and was also well placed to manage people's expectations of the process.

Vulnerable conditions are a manifestation of a denial of access to desired assets

The causes of people's vulnerability were often framed by community members with reference to a sense of a 'denial of access' to certain needs that ideally would be addressed as components of CBDRM. For example, people expressed a need for improved safety, education, employment, land, natural resources, strong buildings, rights to vote, and government support. However under normal conditions these needs were largely unattainable. In Bihar this appeared to be closely associated with social

hierarchy (caste). Lower landless castes were dependent on wealthier landowners for example. Out of this state of dependence they had limited opportunities to earn an income sufficient to pay for education, land, stronger buildings and so forth. Indeed in order to acquire assets people were often obliged to borrow money from lenders charging very high interest rates. These conditions, coupled with the fact that lower castes typically live in the most exposed locations and in weaker / less flood tolerant houses meant that they suffered most directly during the flooding. Not only would households be forced to evacuate to high ground (on the embankments), but on their return to their villages they would need to repair or rebuild their homes and important infrastructure such as tube wells; a relatively significant financial burden. But the flood, due to the loss of income earning through agriculture while fields were submerged and waterlogged, for example, also indirectly affected them. (Further details can be found in Appendix B.) Through this complex set of social norms people felt un-empowered to increase their access to a set of assets that could enhance their position, while reducing poverty and vulnerability.

Consensus building avoids challenging existing power relations

The strategy adopted in the case study location to help alleviate 'pressure' on the most vulnerable communities through CBDRM was consensus building. The alternative would have been to challenge existing power relations so as to balance the distribution of wealth and influence more equitably[232]. Consensus building took the form of local advocacy with forty-six landowners to agree to the building of a raised path across their land from low-lying areas to the raised embankments. Formerly the landless were not entitled to cross this land, even as a means of evacuation. Through agreement based on the NGO's advocacy with the landowners, the most vulnerable groups would benefit from the path as they would be able to evacuate directly across the landowners land and have more time to achieve this as water levels rose. So the landless labourers constructed the path through mango tree plantations owned by the

[232] Pelling (2007) says, "The way in which participatory projects and assessments intervene in the everyday playing out of power relations at the local level is a frequent theme of more critical assessments of participatory methodologies. Critical views of making change identify conflict as a necessary precursor to the redistribution of power—and in many cases this might be a correct analysis. An alternative view—and currently fashionable, although no less ideological—argues that energy should be put into seeking to make change through building consensus."

landowners. However, upon completion the landowners themselves were able to use the path to ease the harvesting of the mangos through the use of carts. There were thus twin benefits: to the landless and the landed. A consensus was reached that reduced vulnerability but did not directly alter the existing power relations.

Likewise during the 2004 Bihar flood a 'Village Development Committee' (VDC) set up by the NGO was given jurisdiction to distribute relief assistance as deemed appropriate. As well as providing relief to those most in need the VDC decided that some higher caste households, with less need, should also be supported. This was so as to ensure that future relationships were maintained.

Some underlying causes of social vulnerability are exercised locally

Some underlying causes of vulnerability are not always related to distant forces but can be witnessed at a local level, which has both opportunity and challenge connotations for CBDRM. For instance, the participatory tools and techniques adopted in the CRA processes often resulted in the development of hazard maps, seasonal calendars and other visual aids. During focus group discussions it was common for one person or a small number of people to dominate discussions. At the end of the meeting the visual aids (drawn map of the community for instance) were left with the community. However it was observed how the most dominant group member was likely to take ownership of the visual aid, perhaps rolling it up and taking it to their home. This undermines the group analysis function of these techniques and provides a clear indication of the localised social hierarchy[233].

Endorsing this observation, in Pakistan during a women's focus group meeting[234], a small number of women dominated discussions intent on ensuring that any external assistance would be directed to their households. On the conclusion of the meeting, when the female facilitators were departing, a small group of women who had been present in the meeting but silent approached the facilitators. They explained in private

[233] It also provides a good understanding of the 'micro-level' need to use assessment tools that cannot be owned. For example, a dominant group would not be able to roll up a risk map constructed in-situ on the earth using pebbles, leaves and similar materials.
[234] Focus group meeting in Balakot, Pakistan, 11 May 2006 (see Appendix AG)

that the views of the dominant women were not representative of the needs of the community.

Government policy on disaster management has limited practical application

The government perspective on the underlying causes of vulnerability or the reason why the flooding has such a significant impact on the State of Bihar was contradictory, presenting a challenge for partnership in a multi-stakeholder CBDRM programme / process. In most instances structural mitigation was considered the only approach capable of producing the desired results. Embankments and dams were as Nehru[235] said still considered "the new Temples of India". However the lack of resources and maintenance over decades has resulted in an acceptance that the existing structural measures may be causing more problems than solutions (see Box 2.2). But this does not deter government aspirations. And despite rhetoric on disaster management[236], encompassing mitigation and preparedness on a multi-sectoral / departmental and multi-level basis as well as relief, government officials even at the highest level of the State are still preoccupied with response.

Local champions of risk reduction are important for progress but their engagement may be short term

Progress made in identifying and tackling the underlying causes of vulnerability through CBDRM and other means appeared to be dependent upon key individuals, whether government or civil society. In both cases these 'champions' often emerged in a post-disaster context where funding and political will helped prioritise DRR, but consequently the short-term nature of post-disaster interventions limited the potential for lasting impact. Most clearly representative of this was when champions of DRR left their posts to take up new work.

6.3 Data Analysis

CRA is given a high degree of emphasis in this research. However, on its own it has been argued that frequently it can be little more than a 'data collection exercise'. Or,

[235] India's first Prime Minister
[236] For example, through the 'Disaster Management Act 2005' and the work of the GoI-UNDP 'Disaster Risk Management Programme' in Bihar

perhaps more kindly, the external agency facilitating the process in a participatory manner hopes that the process raises awareness of disaster risks and creates an environment that is conducive to locally driven risk reducing actions. Because, in this research, only when CRA is purposefully linked with CBDRM actions is it considered a genuinely worthwhile pursuit (see Chapter 5), data analysis in this section is presented accordingly. Based on the data collected, firstly how the underlying causes of vulnerability can be *incorporated within CRA* is considered, and then how the identified underlying causes of vulnerability can be *addressed within CBDRM* follows.

6.3.1 How can community risk assessment incorporate an investigation into the underlying causes of vulnerability?

Use an adaptation of the Crunch Model as the conceptual framework

The emphasis upon social vulnerability over hazards, and the progression of vulnerability from unsafe conditions to underlying causes as conceptualised within the 'Crunch Model' (Wisner et al., 2004) (see Figure 2.3) has proved to be suitable as a framework to aid CRA. Indeed the 'Crunch Model' is currently perhaps the only widely known model that demonstrates these important relationships in simple, logical terms appropriate for field level practitioners. However, as for models in general, it requires critical consideration and adaptation to suit specific contexts and applications if it is to be effective as the basis of an assessment / analysis tool.

In particular, fieldwork demonstrated that 'dynamic pressures', the middle step in the progression of vulnerability, requires special attention. The transition from assessing 'unsafe conditions' into a consideration of deeper-rooted influences upon a local context is an expansion beyond normal CRA practice. This transition opens up a broad array of issues and institutions that are beyond the familiar territory of more typical local NGO and CBO activity. It is, in this regard, not surprising therefore that greater effort is required in developing an awareness among facilitators of what dynamic pressures could be. And more importantly still, how their intricate, perhaps subtle inter-connected influences, manifest themselves within the lives and

livelihoods of the most vulnerable people, households, communities, or even (using the term in its broadest sense) region.

Although some difficulty was expressed by research partners in understanding dynamic pressures, by contrast the progression from assessing what was vulnerable (elements at risk) and why this was vulnerable (unsafe conditions) to the underlying causes of this system was much clearer. Through the repetition of asking individuals, households or focus groups, "why?" facilitators were able to track people's perspectives of risk, disaster and poverty to uncover subjects that were so deep-rooted that they were accepted as part of normal everyday life. For example, even if changes were desirable people have little or no experience in living memory to suggest that this is feasible. They are therefore likely to be perceived as unalterable.

Through such an investigation however key individuals and institutions would naturally emerge in discussions. These were the dynamic pressures, the ways in which the underlying causes of vulnerability are exercised to exert control over particular groups and individuals so as to restrain them within a context of vulnerability to hazards. Consequently it is more logical for facilitation to probe deeper on specific issues pertaining to unsafe conditions until no further response or new material is disclosed, and then subsequently to analyse discussions within a framework that divides vulnerability into its component parts as described in the progression of vulnerability. The 'Problem Tree' is a helpful participatory framework that can be employed to aid such an analysis.

Train and develop skilled facilitators

A key issue, and perhaps even *the* key issue, underpinning the effectiveness of a CRA process that identifies the underlying causes of vulnerability and leads on to a CBDRM process that is positioned to address priorities in this area, is the skill of the facilitator. The demands on this person / team are high. However at present CRA is normally undertaken as a one-off 'special' exercise and not part and parcel of ongoing community-based interventions. This undervalues the CRA process and consequently also diminishes the opportunity for facilitators to receive the necessary training and

support that they require to undertake CRA capable of leading to a sustainable CBDRM programme.

Some of the issues that a CRA facilitator investigating the underlying causes of vulnerability is likely to encounter and needs to manage include:

- The reluctance of community members to disclose their opinion on the underlying causes of vulnerability due to fear of repercussions.
- An attitude of fatalism, lack of vision for the future or disbelief in positive change.
- 'Traditional' or preconceived ideas regarding the underlying causes of vulnerability.
- Unrealistic expectations regarding the outcomes of the CRA process.
- Unwillingness to commit to CBDRM without significant external support (particularly in a post-disaster context of 'relief dependency').
- A lack of interest or enthusiasm of community members to participate in what is perceived as a time-consuming external 'data collection' exercise with no internal benefits.
- Different perceptions of risk (within communities and among other stakeholders, such as government officials) and prioritisation of solutions.

Therefore the skills required by the facilitator of a CRA process, particularly one that investigates the underlying causes of vulnerability from a local community perspective, are extensive. If not managed appropriately identifying and analysing *why* the poor and marginalised are at risk can simply generate or accentuate a sense of worthlessness, weakness and pointlessness. This can then quickly become a futile or even damaging exercise. The skills needed to counteract the various challenges in CRA facilitation include:

- An understanding of the links between disasters, development and risk.
- An understanding of the CRA process and an ability to apply it in unique circumstances.
- An ability to develop good relationships with local community members based on trust, respect and rapport - Bearing in mind that communities exposed to

hazards are not necessarily 'community-like'. They are a complex mix of social groups and hierarchies (see Box 2.4).

- An ability to help raise disaster risk awareness, prioritise areas for action and empower local communities around a shared long-term developmental vision to sustained action.
- An ability to adopt a meaningful participatory approach to the process utilising appropriate participatory tools and techniques.
- Semi-structured interview skills for interaction with key informants / local stakeholders.
- The ability to develop / be an active participant in partnerships between stakeholders within civil society, government, the private sector, the science / academic community (such as technical experts on climate, or seismologists), and possibly the media, UN and other NGOs.
- Advocacy skills.

Develop a partnership between local and external facilitators

Such a demanding array of skills implies a need for professional expertise, as was alluded to above. And this is appropriate. However the attainment of the goals of sustainable CBDRM are dependent on local action. Thus locally based facilitation would be advantageous. A local facilitator, with appropriate training and support, is very well placed to minimise the scale of the challenges that a CRA process typically has to surmount (as described above). As an example, this was demonstrated through the People's Organisation, 'Buklod Tao' in the Philippines. However a local facilitator may also have:

- Vested interests (for example, bias towards family members).
- Limited awareness of hazards that have not been experienced locally (for instance due to climate change or low-return period hazards such as earthquakes or tsunamis).
- Lack of experience regarding the functioning of higher-level institutions and lack of influence at such levels.

A partnership between an outside 'expert' and local facilitator is well placed to guide a CRA process, particularly one that explores the realm of the underlying causes of vulnerability.

Focus on priority risks

The way in which local communities function is based on a complex set of interactions between different people, groups and institutions that together could be described as a 'traditional way of doing things'. DRR has a low priority as a separate activity when compared with other demands such as for improved security, health, education and employment. It is rare for a natural hazard to be considered a priority risk across a broad spectrum of society. The exception is in a post-disaster context or a circumstance where the hazard occurs on a regular basis causing significant disruption, such as flooding in Bihar.

Vulnerability is a relative and predictive term. It is considered in relation to a specific eventuality and its probability for causing damage, such as a flood of a certain magnitude occurring within a certain time period. It is highly localised. In order to investigate the underlying causes of vulnerability one has to be clear on what the vulnerability is. In other words who or what is 'at risk', to what degree, and from what? A significant degree of prioritisation is required so as to reach a consensus among a group of people regarding what they consider to be the priority hazard and the priority 'element at risk'. Only then can an analysis of the underlying causes of vulnerability regarding this priority be coherently investigated. Therefore the challenges of investigating the underlying causes of vulnerability are made measurable more demanding in circumstances where communities are exposed to numerous hazards, whether natural or otherwise.

Engage local government in the community risk assessment process

Risk is essentially a subjective concept. It is dependent upon people's perception. CRA is normally focused upon a community of people that are exposed to the same hazard. In a community of this definition there are likely to be numerous different perspectives on risk and how they should be managed within the context of normal

daily activities. CRA, through skilled facilitation, the use of focus groups and participatory tools and techniques, and based upon a relationship between the facilitator and the community members, is capable of analysing this level of complexity. However, despite a common criticism of governments, it is uncommon for CRA to shift from a highly localised process to actually *engage* with more macro level issues and perspectives. And if this is undertaken then it can often be considered as tokenism: Perhaps the invitation of a government representative to attend an opening ceremony or workshop. And it is often from the perspective of the likely need for additional resources to fund structural mitigation measures. This approach is not well placed to analyse the divergent perceptions of risk between local groups and resource providers. Consequently sustainability of CBDRM is questionable, particularly when differences in perspective regarding the underlying causes of vulnerability are considered.

Although more complex, for example on account of the interactions of people with differential degrees of power and influence, a CRA process that engages local government officials in the process would potentially enable a more comprehensive analysis of vulnerability and its causes to be undertaken[237]. Such a process could help to overcome some of the local community perspectives that, in their opinion, are associated with the underlying causes of vulnerability. For example, the process could help to expand preconceived ideas of risk through improved awareness raising. Also, this type of process is well placed to help overcome the lack of trust between government and local communities (see Chapter 7.3.3) and the lack of local participation in development decision-making (see Chapter 7.3.1).

6.3.2 How can the underlying causes of vulnerability be addressed within community based disaster risk management?

Ensure community based disaster risk management is a long-term process

Among the constraints on the CRA process, the timeframe within which overall interventions (CRA and CBDRM) are planned is significant among them. At grass-

[237] A risk in this approach however is that the dynamic of including a resource provider in a community-based exercise will reduce the quality of the process due to demands placed on the resource-provider

roots level, DRR is closely associated with the remit of humanitarian actors and relief / recovery operations post-disaster. Such operations have limited scope for lengthy participatory processes focused upon long-term developmental goals. This is a dilemma for CRA that is normally introduced during the 'window of opportunity' after disaster[238]. However for a CRA process that investigates the underlying causes of vulnerability the dilemma is more profound as such a process has been even more strongly linked with development and advocacy. The underlying causes of vulnerability cannot be addressed in a short timeframe.

Develop an advocacy strategy initially based on mutual benefits

The underlying causes of vulnerability are likely to be associated with an unequal distribution of power and wealth where the more vulnerable social groups are constrained in their ability to access capital (human, social, physical, natural, financial). For CBDRM to sustainably address the underlying causes of vulnerability there needs to be an equitable distribution of power and wealth based on an environment where access to capital is attainable for all. There is reluctance though of the 'haves' to allow this shift to occur. And it is the 'haves' who are able to decide. Advocacy to address such issues is essentially therefore targeted at demanding or encouraging a change in perspective and relationships between groups. This, particularly to a local CRA facilitator, can seem daunting.

A more realistic strategy is to start at the local level with a basis of consensus building between those with power and influence and those without. This is not so confrontational. Such a strategy looks for ways in which some aspects of the underlying causes of vulnerability expressed and experienced by those 'at risk' can be reduced without directly challenging the relative status of the more powerful and wealthy. An acceptance by the more powerful and wealthy to support methods to reduce the underlying causes of vulnerability for the poor can be achieved by seeking mutual benefits of the scheme. This was demonstrated in Bihar with the building of the path through the mango tree plantations. However this strategy is not a closed system. It can open up new opportunities that hitherto were not feasible. For example,

[238] Although personal experience in Pakistan (following the earthquake) and Indonesia (following the tsunami) suggests that the emergency period itself is inappropriate for CRA

through the building of the path through the mango tree plantations the more powerful and wealthy landowners have entered into dialogue with the less powerful and wealthy landless labourers living on their land. This dialogue may seem trivial but set against the context where it is not uncommon for lower caste labourers to be beaten for drinking from the 'wrong' well or 'trespassing', a context where groups are able to discuss openly about their lives and livelihoods and how these are affected by hazards and risks is healthy. And it is a firmer foundation on which to build a more visionary advocacy initiative, in this instance possibly with the support and participation of the landowners, in support of sustainable CBDRM and development.

Look for leverage points

Protecting lives and livelihoods from disaster through CBDRM needs to mesh with development concerns associated with improved health care, education and employment and other issues prioritised locally. Sustainable CBDRM is unlikely if it is a stand-alone programme or initiative divorced from the wider set of aspirations and influences. However, despite its importance due to the ability of disasters to impact development, CBDRM (as has been described already) is likely to be a low priority for action. This is particularly so regarding threats that have not been experienced perhaps associated with climate change.

Therefore sustainable CBDRM needs to strengthen 'normal' development (and relief, recovery and rehabilitation). This is best achieved by looking for 'leverage points'. These are opportunities where normal development activities can be bolstered by the integration of CBDRM with a multiplying or 'knock-on' effect. For example 'Village Development Committees' (VDCs) may be concerned with a decline in agricultural productivity. A leverage point aiding sustainable CBDRM would be the introduction of agricultural practices or seed varieties that help counteract this current concern but also demonstrate resilience against current and even future threats. In climate change adaptation this is referred to as a 'no regrets' approach.

An important aspect in this is that a process of CRA and CBDRM may begin without knowledge of what these leverage points will be. Therefore flexibility and

imagination are required as pre-prescribed solutions are unlikely to meet with local realities.

Develop partnerships with stakeholders

Many of the underlying causes of vulnerability are likely to be associated with systems and processes external to the community 'at risk'. While a community can protect itself from these to some degree through local actions based on existing capacities, in order to be effective and sustainable CBDRM needs to be supported by actions that address these external factors.

This is best achieved through multi-stakeholder partnerships. It is not realistic that a local community group or NGO, or indeed local government, can alone address the underlying causes of vulnerability. However as the causes of vulnerability are tracked further and further outside of the community to higher and higher levels of society, the number of people that are interested or aware of the local conditions diminishes. At high levels individuals have a broad perspective regarding vulnerability. It is into this context that the local realities need to be recognised, acknowledged and acted on. In order to have a chance of being effective strategies to achieve this need to be targeted. Within a large institution (that perhaps has a more direct relationship with issues identified by local communities as being the underlying causes of their vulnerability, such as a government ministry or a donor organisation) key individuals need to be identified. These individuals may be willing and able to represent local views within the culture and structure of their institution and seek to alter relevant systems and processes in favour of risk reduction. Such individuals are sometimes referred to as 'champions'.

6.4 Conclusion

CRA methodologies and their applications rarely make a purposeful attempt to identify the underlying causes of vulnerability within a process that is geared towards long-term measures of vulnerability reduction. The development and testing of the CRA tool, 'Participatory Assessment of Disaster Risk' (Venton and Hansford, 2006),

which was based on an adaptation of the 'Crunch Model' (Wisner et al., 2004) was thus a rare opportunity for such an investigation to be undertaken.

The following chapter builds on the findings of this component of the research and investigates methods of enhancing the sustainability and scale of CBDRM through stakeholder partnership. As the causes of people's vulnerability are commonly associated with issues beyond the scope and means of local communities to address independently, the consideration of other stakeholders becomes even more important.

6.4.1 Summary of gaps in knowledge addressed by this research

- Development of a CRA tool that incorporates an investigation into the underlying causes of vulnerability[239].
- The identification of *twenty six key issues* when addressing the underlying causes of vulnerability within CBDRM (see Chapter 6.2).
- The development of *five recommendations* regarding how CRA can incorporate an investigation into the underlying causes of vulnerability (see Chapter 6.3.1).
- The development of *four recommendations* regarding how the underlying causes of vulnerability can be addressed within CBDRM (see Chapter 6.3.2).

[239] 'Participatory Assessment of Disaster Risk' (Venton and Hansford, 2006)

7 CHALLENGES IN ENHANCING THE SUSTAINABILITY AND SCALE OF COMMUNITY BASED DISASTER RISK MANAGEMENT THROUGH STAKEHOLDER PARTNERSHIP

7.1 Introduction

This chapter is based on the research objective:

To identify challenges in enhancing the sustainability and scale of community based disaster risk management (CBDRM) through stakeholder partnership.

While CBDRM is receiving increasing attention as an appropriate approach to risk reduction, some serious limitations have emerged[240] (see Chapter 2.2.5). Some of the important limitations can be tackled by:

1. Addressing the underlying causes of vulnerability (see Chapter 6.3.2).
   This is supported by the words of Dr Allan Lavell (FLACSO) who stated[241], "The community level…is too circumscribed, small scale and dependent on outside factors to be able to operate on its own in any sustainable fashion when dealing with the range of pre, during and post [disaster] impact aspects."
2. Scaling-up the relatively small number of isolated locations where CBDRM is undertaken.
   This is supported by the words of Dr Marcus Moench (ISET) who stated[242], "As with most community-based development strategies, scaling up is a critical challenge. NGO initiated projects have been able to demonstrate

[240]For example: communities may not place sufficient emphasis on risks they have not experienced; the high financial costs that are needed in implementing certain physical mitigation measures; the reality that it is not possible, in the case of riverine flooding to tackle flood risk in an upstream community without affecting a chain of downstream communities; and on account of the factors influencing risk creation, and the necessary resources required to challenge this.

[241] In Lavell's questionnaire response (see Appendix AJ)

[242] In Moench's questionnaire response (see Appendix AJ)

effective strategies for disaster risk management in specific locations but the scale of activities is often miniscule in relation to the need."

To address these issues an integrated approach to CBDRM is required involving multiple stakeholders, particularly with the active involvement of local government as noted in the following section. This was identified as a 'principle and practice' of sustainable CBDRM (see Chapter 4.2).

7.1.1 Government focus

Of all the stakeholders important to CBDRM, besides local community members themselves, the role of the government has been singled out. This has been noted in literature, workshops and during fieldwork with communities far more frequently and with much more emphasis than any of the others (such as the private sector, NGOs, the media, the emergency services, the military, donor institutions or the UN). This priority justifies its inclusion in this research although does not undermine the need for more research regarding the links between CBDRM and other stakeholders.

This chapter then explores the challenges in enhancing the sustainability and scale of CBDRM through stakeholder partnership by investigating the link between CBDRM and government policy and practice. In doing so this research opens up new perspectives on the barriers to addressing the underlying causes of vulnerability within CBDRM and the scale of its application. This in turn provides some clarity on areas for targeted support.

7.2 Data Collection

7.2.2 Challenges linking community based disaster risk management with government policy and practice

With the use of a questionnaire and through semi-structured interviews, expert practitioners and academics were asked[243]:

[243] The views of expert academics and practitioners from a range of countries were sought. Details can be found in Appendix AI. The questionnaire can be seen in Appendix AJ. Semi-structured interviews covered a range of issues, but focused upon the areas pertaining to the research objectives including linking CBDRM with government policy and practice.

What are the challenges associated with linking good practice community based disaster risk management with government policy and practice?

The responses have been grouped into issues and ordered according to the number of times they were stated (see Table 7.1).

Table 7.1: The Challenges in Linking Good Practice CBDRM with Government Policy and Practice

What are the challenges associated with linking good practice community based disaster risk management with government policy and practice?	
Number of Times Identified	**Issues Raised**
4 Times	• CBDRM requires a people-centred approach rather than top-down command and control • There is a lack of trust between governments and local communities / non-governmental organisations • There is a lack of government resources for implementation • Disaster risk reduction has a low priority in areas not affected by a recent disaster
3 Times	• There is a lack of training and human capacity within governments for CBDRM • Governments emphasise structural 'quick-fixes' over longer-term vulnerability reduction
2 Times	• Changes in government policy take a long time • The coordination of the highly diverse aspects of CBDRM is difficult to achieve • Non-empowered communities will find it hard to convince governments of the need for CBDRM • Governments, local communities and non-governmental organisations have different perceptions of risk • Non-governmental organisations need to adopt a more sophisticated approach to dealing with governments based on an appreciation of government systems, procedures and constraints

What are the challenges associated with linking good practice community based disaster risk management with government policy and practice?	
Number of Times Identified	**Issues Raised**
	• Non-governmental organisations have a lack of experience in scaling-up CBDRM by engaging with government • CBDRM is context specific, and therefore hard or inappropriate to scale up • There is a lack of government involvement in participatory risk assessment • Process-thinking is required, rather than project-thinking, which requires a time consuming commitment to CBDRM • There are a lack of institutional mechanisms and policy frameworks to integrate CBDRM within development • Governments are reactive to disasters rather than proactive / preventative
1 Time	• There are a lack of formal venues and opportunities for dialogue between governments, non-governmental organisations and local communities • Within contexts where there is a lack of tenure or access to safe land • It is hard to achieve government acceptance of CBDRM principles • It is hard to mount a convincing argument due to a lack of a comprehensive public database on CBDRM • There is an attitudinal and ideological divide between governments, non-governmental organisations and local communities • There is a lack of transparency on both sides (government and civil society) • Governments consider themselves to be the experts rather than local community members • Good practice CBDRM is usually confined to disaster preparedness and does not tackle the underlying causes of vulnerability • There may be a lack of formal government • There is a lack of clarity regarding the role of governments in CBDRM

What are the challenges associated with linking good practice community based disaster risk management with government policy and practice?	
Number of Times Identified	**Issues Raised**
	• There is a strong responsibility for the donor to ensure that governments act appropriately in terms of supporting CBDRM

Expert practitioners and academics were also asked[244]:
Can you cite any examples of where NGOs have been successful in this [linking CBDRM with government policy and practice], and how challenges were overcome to achieve it?

Their response to this question combined with the issues listed above, which were supported by a collection of quotations, were written in a draft report and discussed at a workshop[245]. Governments were then also asked the same question regarding the challenges in linking CBDRM with government policy and practice[246]. And consequently the combined expert practitioner, academic and government responses were categorised for analysis. Twelve categories were identified[247]. These are presented below supplemented with some brief statements to give an indication of the data collected. In most instances, the first statement is by an expert academic or practitioner and then a government perspective is included. Occasionally case studies are also included that indicate examples of how some challenges in linking CBDRM with government policy and practice have been addressed.

Competing priorities
Annelies Heijmans (Wageningen University) stated, "In many countries disaster risk reduction is not a priority." A common government perspective on the reason for this was provided by the National Council of Emergency Aid, Government of Burkina

[244] See Appendix AJ
[245] See Appendix AK
[246] The semi-structured interviews with government officials covered issues pertaining to the research objectives, including the link between CBDRM and government policy and practice (see Appendix AL)
[247] Two categories had sub-components

Faso, with the words, "The lack of resources available to the government…means that it prioritises health and education." A way round this problem according to Dr Mark Pelling (Kings College London) is to, "integrate disaster risk reduction within existing priority agendas such as family health care, microfinance or settlement upgrading."

Lack of financial resources

Professor Rajib Shaw (Kyoto University) stated, "Budget allocation for CBDRM is still…externally dependent, not using the government regular development budget." This was endorsed by Haji Deen Mohammad (Government of Afghanistan[248]) with the words, "There are limited resources available for government to utilise…There is no development budget allocated for disaster risk reduction activities, [but] there is a budget…for emergency situations (after disasters)." This dilemma regarding how funding is made available was explained by the Government of Burkina Faso[249]. "When there is a crisis, funding is sought from many donors. For example UNICEF finances training and the state contributes in part as well. WFP and the Red Cross also intervene with aid. The government gets support from the World Bank, OCHA and UNDP. However there are no funds available for disaster risk reduction."

Low government capacity for community based disaster risk management

Rajeev Issar (UNDP-India) stated, "Inadequate orientation, training and capacity building of the government [officials], especially at the lower levels, impedes proper appreciation of the criticality of CBDRM for safeguarding community and developmental assets. A proper training programme would help develop an administrative mindset sensitive to the disaster risk management needs and concerns." As an example of a lack of training, the last time the government sent a staff member from Zambia's meteorological department (which disseminates early warning information) on a training course was six years ago. The lack of training was also emphasised by Abdul Rahim Talwar (Government of Afghanistan[250]) who said, "Unfortunately…the level of awareness among the [government] staff is very limited. [Over the] last few years…there was just one seminar about disaster risk reduction,

[248] Governor of Kabul Province
[249] National Council of Emergency Aid
[250] District Governor

for District Governors only. Other government staff who are supposed to respond and contribute in disaster cases need to have these kinds of trainings."

Box 7.1: Case Study – The Philippines

"In the Philippines CBDRM practice used to be the domain of NGOs. However, since 2001, the appreciation of CBDRM by the government has been very positive. It started when a national conference initiated by an NGO, which courted the National Disaster Coordinating Council (NDCC) to be its partner, was held. Since then, a number of NGOs and the government together lobbied for enacting laws favourable to CBDRM. As a result of this partnership, last year some members of the NDCC and NGOs with the leadership of the Centre for Disaster Preparedness (CDP) produced a 'Facilitators Guide and Sourcebook for Integrating Disaster Risk Management in Local Governance'. The Guide will soon be published to be used by the local government in training Barangay officials (smallest political units in the country) on CBDRM"[251]. (Zenaida Delica-Willison, UNDP)

Lack of government systems and structures to support community based disaster risk management

Anita Shah (UNDP) stated, "Policies may exist and community based programmes may exist however the creation of systems and structures at National, Provincial and District levels to enable the institutionalisation of community efforts may be lacking." Dawid Musa and Gemeda Safai Oromia (Government of Ethiopia[252]) agreed that there was a lack of an organisational structure set up specifically to undertake DRR.

Emphasis on response: The emphasis on response was cited as being a reason why there is a lack of systems and structures to support CBDRM. For example, Mckey Mphepo (Independent consultant) stated, "Government departments dealing with disasters have invariably acted after the disaster, [whereas] disaster risk reduction requires a re-orientation of approach." And Sanjay Pandey (Seconded from UNICEF to Administrative Training Institute, Bihar, India) said that, "The greatest difficulty in training government officials on disaster management", which is his responsibility, "is their preoccupation with relief." Asutosh Mishra (Government of India[253]), also accepted that, "Historically the government has been relief focused." However he

[251] The book will be published by the Regional South-South Unit in the UNDP Regional Centre in Bangkok
[252] Disaster Prevention and Preparedness and Food Security Commission
[253] State Relief Commissioner for Andhra Pradesh

went on to say that, "Now there is a shift to preparedness. But the financial shift has not happened, with money remaining earmarked for response. So relief money is released, but vulnerability reduction is harder."

Box 7.2: Case Study - India

"Following the 1999 Super Cyclone, in Orissa, India, a number of government officials supported the need for CBDRM, and by 2001 co-ordination systems were in place. This was made possible by the continued efforts by NGOs (on-going awareness campaigns and training programmes) to support government departments and officials on the importance of having early warning systems in place and the sharing of information. Communities had also been trained on disaster preparedness activities and on incorporating DRR activities with livelihood strategies. [Consequently] they were better prepared for the 2001 floods in Orissa. This in turn influences government departments / officials to include DRR activities within their development plans. [Indeed] disaster preparedness activities were [subsequently] included in District Development Plans." (Kwanli Kladstrup, Concern Worldwide)

Lack of effective government decentralisation

Allan Lavell (FLACSO), stated, "The lessons are clear. Projects inspired, developed and instrumented at the local level with real and full local participation, built into ongoing development objectives and goals and supported, but not dominated by external efforts and resources, are far more likely to be sustainable and up-scalable than when the schemes are imported from outside." However Dr Mark Pelling (Kings College London) warned that, "Where national policy is not devolved to local government there is limited opportunity for building the personal relationships or for exchanging the detailed information required to build partnerships between community-based initiatives and the state." In answer to this, Ahsan Uddin Ahmed (Bangladesh Unnayan Parishad Research Institute) suggested that, "A policy shift [is required], moving away from central-dominance to 'people-centric institutions', where local people are enabled to plan for all aspects of disaster risk management."

Box 7.3: Case Study - Vietnam

"In Vietnam…the government itself is piloting community driven disaster risk reduction measures in 10 [villages]...The project was conceptualised through a thorough consultation process [involving local people and government officials]. Lessons from this experience will be noted and it is intended that CBDRM will be carried out in 100 other villages." (Zenaida Delica-Willison, UNDP)

Short time frames

Patrick Fox (IFRC consultant) stated, "Government interventions too often reflect the election mandate and not the vulnerability itself. As governments (and staff) are exchanged, the new people tend to respond to issues immediately at hand, and fail to look at the larger picture." Rosalinda 'Maan' Tablang (CDRC, Philippines) also explained that, "Even if a [local government official] supports community based disaster management activities in principle, new [local government officials] are soon appointed who frequently oppose any initiative adopted by their predecessor so as to exert their new-found influence."

The desire for quick fixes: Knud Falk (Danish Red Cross) observed, "It is difficult to convince political levels of the effectiveness of risk reduction plans not involving impressive and 'quick-fix' structural mitigation measures. There must be something tangible, or at least some visible organisational structures, that can be shown for administrators and politicians to serve as an illustration of the risk reduction or level of preparedness". However Paul Pagaran (Philippines National Red Cross Society) pointed out that, "The hardest part of the process is in securing sustainability of community based disaster management beyond the physical construction of a mitigation measure."

Poor appreciation of the government context

Marcus Moench (ISET) stated, "The replication of CBDRM strategies at scales beyond those where NGOs can provide direct support is heavily influenced by…relationships with governments. Understanding…and getting the…relationships right is probably the most important factor in linking community-based activities with government policy and programmes." Therefore, according to Edward Turvill (Action Contre La Faim), "One of the challenges for NGOs has been to identify the

appropriate government counterpart that is most likely to be receptive towards local level initiatives for disaster risk reduction." And then, in the words of Fe Andaya (Centre for Disaster Preparedness), "NGOs have to cultivate and maintain positive relationships with [these] key government officials who serve as champions for CBDRM to ensure that their agencies policies and practices are influenced."

Lack of understanding and clarity on good practice community based disaster risk management

Saroj Jha (World Bank) stated, "There are wide variations in defining an approach to CBDRM." Edward Turvill (Action Contre La Faim) suggested that this lack of clarity could be addressed with the use of "visual tools…such as videos / DVD."

Lack of influence at government level

Bruno Haghebaert (ProVention Consortium) stated, "There are insufficient efforts of civil society actors to influence government policy and practice through advocacy." Fe Andaya (Centre for Disaster Preparedness) suggested that, "To be able to influence government policies and practices, NGOs must never tire of leading / organising activities that will ensure that they will be heard by policy makers and government executives. From simple one-on-one talks and sharing of reading materials / reports to calling for forum or coordination meetings or getting oneself invited to one, to organising national consultations or forming a network of advocates, NGOs can influence / shape government policies and practices."

Box 7.4: Case Study – The Philippines (Part 2)

"In the Philippines…the Citizen's Disaster Response Network…were able to strengthen community organisations, and facilitate the formation of alliances to increase the voice of local people at risk at national level to defend their rights. But one success may not last forever: new risks continuously arise, and new strategies need to be developed." (Annelies Heijmans, Wageningen University)

Different perceptions of risk

Philip Buckle (Coventry University) stated, "Government perceptions of risk [could well] differ from actual risk or the risk perceptions of local people." An example

representing this point was provided by Asutosh Mishra (Government of India[254]) who said, "At present the District Officers [in Andhra Pradesh] only consider distance from coast or from tanks that are likely to burst, for instance, as being indicators of people's vulnerability [to cyclones]."

Lack of trust

Fe Andaya (Centre for Disaster Preparedness) stated, "The mistrust or the antagonistic stance between government and some non-government organisations hinders them from listening and learning from one another." This was endorsed by the Government of Afghanistan[255] in the words of Haji Deen Mohammad who said, "The NGOs working here hardly realise the context and they are not feeling enough responsibility towards governmental organs. It is the NGOs who are reluctant to [engage with] governments. But I agree with the reluctance of government to hear communities."

Lack of integration of disaster risk reduction in development

Saroj Jha (World Bank) stated, "CBDRM [is] seen as a distinct approach and often divergent with participatory development planning approaches." The lack of integration with development was often linked with the occurrence and frequency of disasters as, in the words of Professor Mel Luna, "Only post disaster do the [local government officials] recognise the need for action." This was expanded by Jennifer Leaning (Harvard University) who suggested that, "A key issue is the time interval between repetitive disasters (shorter intervals, more intense and recent memory, the more rapid the learning curve), and the extent to which local communities are shocked into awareness by adjacent disasters of similar character that conceptually strike close to home."

7.2.3 Donors' disaster risk reduction policy and practice

The previous sections highlighted the challenges in linking CBDRM with government policy and practice. Among these challenges, 'lack of financial resources' and 'low government (staff) capacity for CBDRM' were identified as hindering governments from making more progress. Indeed government officials in several countries stated

[254] Andhra Pradesh State Relief Commissioner
[255] Governor of Kabul Province

that these were their major constraints, and that they required the support of donor institutions. For example:

- Abdul Rahim Talwar (Government of Afghanistan[256]) stated, "Due to lack of awareness about DRR methods and terminologies, human resources for implementation of DRR projects are limited. Therefore the question of allocation of more resources will be referred to foreign donors and countries."
- Government of Burkina Faso[257] stated, "Donors [need] to integrate DRR activities into their strategy of intervention which could allow the government to assign a great part of its budget to DRR."

Ali Rizvi (CARE – International) agreed that donors are perhaps best positioned to "influence, encourage, and assist" all the actors involved, including government and non-governmental sectors, to "incorporate and integrate disaster preparedness and response in a holistic manner". But despite this Professor Rajib Shaw (Kyoto University) explained that in practice there is a "lack of involvement of international donors and multi-lateral development bodies in dialogue with the country government on the need and priority of CBDRM."

7.3 Data Analysis

Research among expert academics and practitioners (during the autumn 2006)[258] and governments (during spring and summer 2007)[259] revealed a number of challenges in linking CBDRM with government policy and practice. These hinder governments from addressing some of the underlying causes of people's vulnerability and scaling up CBDRM initiatives. The challenges fall into three categories:

1. **Top-down issues**: Government-related issues that can hinder the allocation of resources for CBDRM.
2. **Bottom-up issues**: Community-related issues that can hinder the flow of information on CBDRM to government.

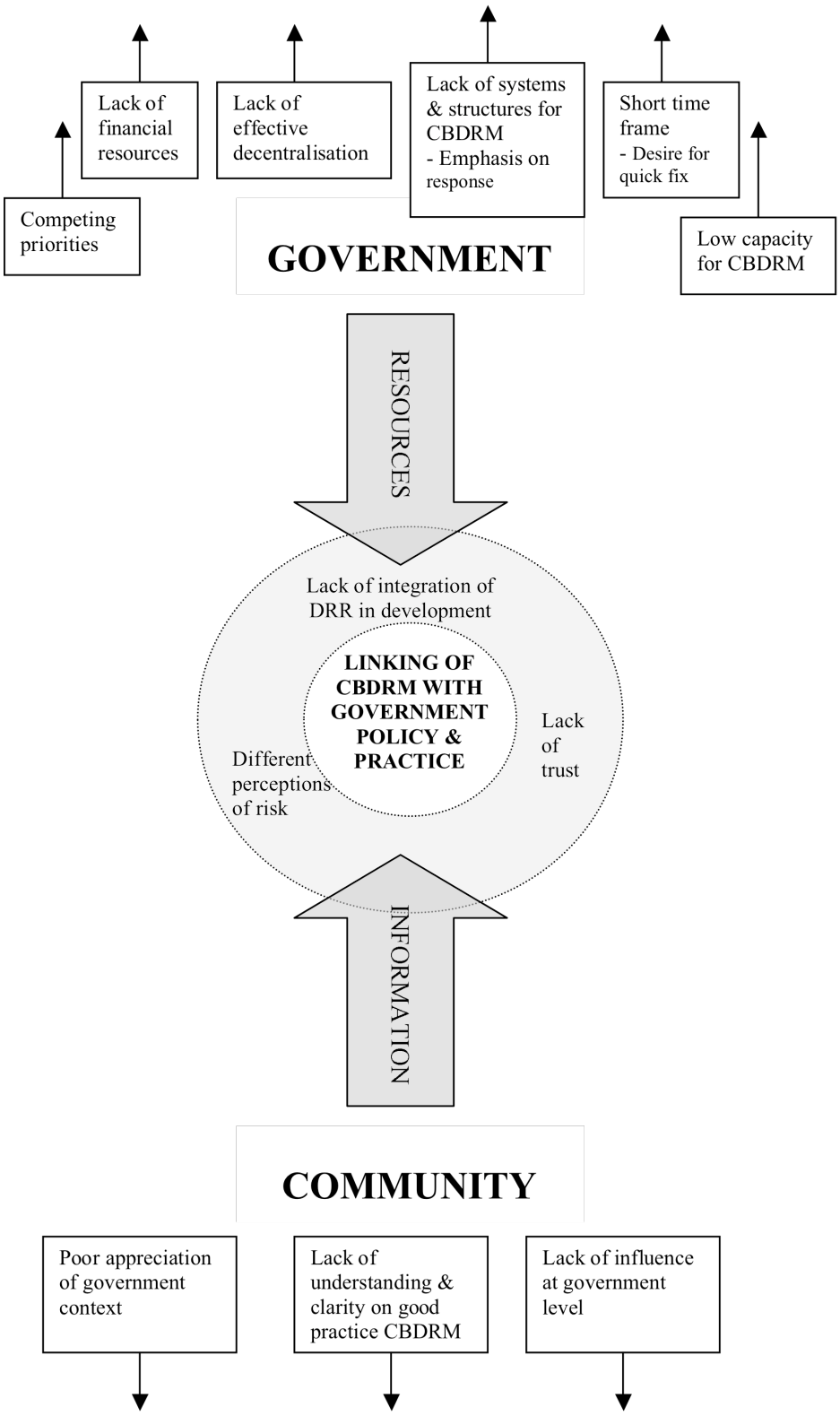
[256] District Governor
[257] National Council of Emergency Aid
[258] See Appendix AI
[259] The governments of Afghanistan, Burkina Faso, Ethiopia, Malawi, Niger and Zambia were interviewed (see Appendix AL). Supplementary semi-structured interviews were also drawn on (undertaken between spring 2004 and summer 2006)

3. **Shared issues**: Government and community-related issues that can act as barriers to linking CBDRM with government policy and practice.

Figure 7.1 illustrates that government resources flowing down from the top and community-level information flowing up from the bottom need to meet in order to link good practice CBDRM with government policy and practice[260]. However the illustration also shows six issues hindering governments from allocating resources in support of CBDRM: indicated by the small arrows pointing upwards rather downwards. The figure also shows three issues hindering the flow of information on CBDRM to government: represented by the small arrows pointing downwards rather than upwards. And finally the figure illustrates three 'shared issues' acting as a barrier to linking good practice CBDRM with government policy and practice.

[260] The premise of Figure 7.1 is that predominantly information needs to flow upwards and resources downwards, but *information also needs to flow downwards* regarding issues such as climate change, and hazards that have not been experienced locally. Technical knowledge and expertise is important and is unlikely to exist within a local community.

Figure 7.1: Linking CBDRM with Government Policy and Practice



Data analysis is based upon the top-down, bottom-up and shared issues as illustrated in Figure 7.1. Issues marked with * indicate that these are the issues that were most commonly cited by expert practitioners and academics (see Table 7.1). Under each issue firstly an analysis of the data related to why it is a challenge is presented, and then a brief indication of options that could be employed to help overcome the challenge are included.

7.3.1 Top-down issues: Government-related issues that can hinder the allocation of resources for community based disaster risk management

*Competing priorities**

The demands of other sectors, such as health, education, infrastructure development, and environmental management, are often perceived as being competing agendas and not complimentary to DRR. This is particularly relevant in developing countries and areas that have not recently experienced disaster. Also, the level of priority given to DRR varies considerably among different organisations, government departments and even their individual staff members. And despite the risk to their lives and livelihoods, its relevance may not even be recognised by community members, who are primarily concerned about daily wages or the well being of their children for example.

Awareness raising to improve the prioritisation of CBDRM as a component of development can be achieved through[261]:

- Demonstrating the cost effectiveness of DRR and the use of good practice case studies and videos.
- Identifying someone at a high level who can lead others and sustain interest in the pursuit of DRR within an organisation or government department[262].

*Lack of financial resources**

Governments, and other stakeholders, have strictly limited resources. In particular poorer countries often have limited room for manoeuvre[263]. The use of whatever

[261] Although not identified during data collection, a participatory risk assessment (such as CRA) is also a strong method of raising awareness

[262] This person may be referred to as a 'champion'

resources are available is determined through a process of prioritisation, so if, as is normally the case, DRR is low on the list of priorities (see above) only a small amount of funding may be available. DRR measures may also be seen as highly expensive. For example on account of the sheer scale of the need and the number of local government units requiring support, or the perceived cost of protecting buildings from earthquake damage for instance. Therefore there is a tendency to assume that little if anything can be done to protect a country from the impact of disaster[264].

A lack of financial resources can be addressed by:

- Integrating DRR within 'normal' development planning so that it can be absorbed within existing development budgeting.
- Demonstrating the cost effectiveness of DRR.
- Emphasising less expensive non-structural DRR, such as disaster preparedness training as part of a school curriculum[265].

Low government capacity for community based disaster risk management

Limited training opportunities available for government officials reduces support for CBDRM. Also, training cannot be limited to national or provincial levels alone, as risk and methods to reduce risk can be very localised (being dependent upon a wide variety of influences that are context specific). CBDRM training is therefore required on a very large scale for local government officials across all hazard and disaster prone areas. As well as this challenge of scale is the fact that government officials may change posts regularly. Training programmes need to keep pace with these changes. Also, the number of dedicated DRR personnel within a government is likely

[263] In part this is due to external impositions placed on them such as restrictions placed on public expenditure due to the servicing of external debt burdens.

[264] This is despite the growing body of evidence in support of the value of investing in DRR measures (a major study of the economic costs and benefits of DRR, including as a tool for climate change adaptation, is to be published by UN/ISDR in 2008) and the special need to protect 'critical facilities', such as hospitals and schools, from damage and collapse. The benefit / cost ratio of undertaking CBDRM in the case study location of Bihar, plus in Andhra Pradesh, was published by ODI in 2004 (Venton and Venton, 2004). And DRR does not need to be expensive. For example, integrating disaster preparedness training into a school curriculum and other non-structural forms of DRR can be minimal additional expenses but with very widespread benefits.

[265] Besides the 53 topics identified as good practice CBDRM referenced in Chapter 4, the diversity of non-structural possibilities are described in a recent matrix developed by Professor Ian Davis for the World Bank (see Appendix AT)

to be very limited. Even in the headquarters of donor governments it was found that there were normally less than four staff members dedicated to this challenging subject[266]. *If* a government has a dedicated unit or department for DRR aiming to raise awareness and knowledge on the subject, its sphere of influence is likely to be relatively small in relation to the broad scope of government sectors, departments and levels that have a role to play in DRR. What is more, the terminology associated with reducing disaster risks can be confusing and mean different things to different people.

In order to address these issues:

- There is a need to provide resources to aid governments in their capacity development work, including through the establishment of DRR focal points.
- Regular training at all levels of government from national to local is a fundamental need.
- Tools, checklists and guidelines are all required to aid officials integrate CBDRM in their normal relief and development operations.
- To minimise confusion and misunderstanding, care is required in the use of 'disaster terminology'.

Lack of government systems and structures to support community based disaster risk management

Without appropriate written procedures, specific focal points, groups, units or departments within government responsible for DRR, community-based work and the policy and practice of governments are more likely to operate in isolation from each other. This is because without such systems and structures in place any government level DRR is likely to be more ad hoc than systematic. As well as this being a problem in itself, it also makes it harder for NGOs to engage with government in an appropriate forum.

Achieving the comprehensive inter-disciplinary and multi-sector approach that is required to reduce disaster risks is most likely when legislation exists to support this, as in the Philippines for example.

[266] For further information, see Tearfund and UN/ISDR (2007)

Emphasis on response: Governments are geared towards responding to disasters once they occur. The proactive approach required to achieve CBDRM requires a set of systems and structures that can facilitate its integration within longer-term development activities. And then, in addition, they must be able to influence the way in which disasters are responded to. Ironically it is often in the aftermath of a disaster that changes are initiated leading to the development of systems and structures to support a risk reduction approach. This is often referred to as a 'window of opportunity'.

As has been described already, DRR is normally not considered a priority. Furthermore disasters are commonly considered by governments to be caused solely by *nature*, due to the impact of natural hazards such as floods, earthquakes or droughts. Consequently governments have tended to assume that DRR is limited to measures that somehow prevent or redirect natural hazards, such as through the building of embankments or cyclone shelters. Whereas the disaster community now better understands disasters as being more about people's exposure and susceptibility to the hazards, rather than only the hazards themselves. This perspective emphasises *vulnerability*. However an additional challenge hindering a change of government approach from a hazard focus to a vulnerability focus is that people's vulnerability, particularly the underlying causes of vulnerability which can be related to marginalisation, poverty and injustice for example, are much more sensitive political issues.

Vulnerable communities and those that work with such communities need to advocate for a change in government perspective on the cause of disasters, away from them being considered *natural* and towards being considered *man-made* or *un-natural*. If accepted this will encourage a more proactive approach to disaster management.

*Lack of effective government decentralisation**

Risk and risk management are, to some degree, inherently local: what is appropriate in one context is not necessarily appropriate in another. In Cuba, Oxfam noticed that the authorities at a local level were accountable to the population and agile in their

response[267]. However in many countries government's are *not* responsive to local people's needs, and the participatory aspects of CBDRM can sometimes be considered a threat to officials holding decision-making powers. There is a tendency for particular groups (for example, the rich and powerful) to dominate and influence the political and economic environment in accordance with their own vested interests. Such groups are inevitably less affected by disasters since they are not exposed to the same degree of vulnerability. Poorer groups on the other hand are not the main political patrons of the state and are less able to dominate and influence government policies.

Even if in principle government officials are open to respecting local needs as identified through participatory processes, centralised decision-making by governments is the common approach. Therefore, even with best intentions, this will struggle to tailor strategies to the characteristics of specific locations. As a result inappropriate homogenised schemes are likely to meet with failure[268].

A policy shift is required, moving away from central-dominance so that local people are enabled to plan for all aspects of disaster risk management. However adequate funding needs to support local decision-making, and the macro level causes of vulnerability should not be overlooked.

Short time frames

Short time frames are problematic because while it may be feasible to introduce some forms of disaster preparedness in a relatively short period, addressing the underlying

[267] See Thompson M. and Gaviria, I. (2004)

[268] Tearfund's experience in Malawi has noted that decentralisation is a lengthy process of change. Over time District Officials have *gradually* been given greater power, resources and capacity to integrate DRR in planning. However this points to a potential negative consequence of decentralisation. In countries where decision-making powers have been given to local government, resources may not have followed. In fact Twigg (2004) states, "Central governments without financial resources may simply abdicate their responsibilities". However he goes on to say that, "Communities do not necessarily lower their expectations of local government [to take account of the fact that they are stripped of resources]." He also points out that, "another fundamental, but less visible, weakness of decentralisation is that it puts responsibility for implementation on those who can only address local-level causes of vulnerability. Local government does not have the jurisdiction or political power to address the deeper political, social, and economic forces that put people at risk."

causes of vulnerability, related to social, economic, physical and environmental conditions, will take considerably longer. Even then, effective risk reduction is not achieved by implementing comprehensive measures on a one-off basis. Instead effective DRR is a continual process of monitoring, evaluation and adaptation of risk reduction measures to best suit current and future circumstances.

The desire for quick fixes: The issue of operating under short time frames is compounded by the fact that politicians may want a tangible 'quick fix' to the problem of disasters. As such there is likely to be an emphasis on measures such as infrastructure development or house building, to the detriment of non-structural measures that are less visible and develop over time.

Awareness raising regarding the importance of reducing vulnerability is required, which may take longer periods of time but is likely to be more effective and sustainable than short-term measures.

7.3.2 Bottom-up issues: Community-related issues that can hinder the flow of information on community based disaster risk management to government

Poor appreciation of the government context

Governments generally function with established bureaucracies that operate under established civil service rules. The way in which governments operate under these rules is quite different from NGOs, particularly in terms of how they work with communities. Typically there can be a lack of appreciation by NGOs of this context, combined with a lack of knowledge and understanding of the range of government priorities that exist. This leads to a lack of sophistication in promoting CBDRM. Any outreach that does occur is also in danger of focusing upon the NGOs' sector of specialism, such as agriculture or education, and thus confining linkages with government departments to this sector. This can undermine the need for multi-sectoral support of CBDRM.

Appropriate government counterparts should be identified that are most likely to be receptive towards local level initiatives for DRR, and then a positive relationship should be cultivated and maintained.

Lack of understanding and clarity on good practice community based disaster risk management

CBDRM as a concept has been growing rapidly in recent years in an effort to reduce the impact of disasters. But as yet, despite the existence of information in the form of case studies and guidebooks, CBDRM has not been critically reviewed or evaluated against an agreed and consistently applied set of standards or principles. Also much experience of CBDRM is not catalogued at all for the benefit of others to learn from the experience, particularly in a way that overcomes language and other barriers. As a result, NGOs' understanding of good practice CBDRM can be vague, which undermines their potential for helping to bring about change in government policy and practice[269].

Consistently applied sets of standards / principles of CBDRM should be applied, and case studies and other more visual tools (such as videos and DVDs) should be disseminated to further share good practices.

Lack of influence at government level

Typically NGOs engage in local level work with communities, resulting in some progress reducing the risk of disaster for those living in the target area. However experience in scaling up such activities for the benefit of a much wider group of people by engaging with government officials and other stakeholders is less common. To make matters worse, the work that is undertaken by an NGO can even be in isolation from that of other NGOs in the vicinity. Amongst other problems, such as lack of coordination and lesson learning, this results in a lack of leverage when it comes to influencing levels higher up than the local communities. Several isolated voices with different (or even the same) messages are not as effective as a single message delivered with a weight of consensus. NGOs may also be sceptical about

[269] Research undertaken on good practice CBDRM, as described in Chapter 4 responds to this challenge

their ability to influence government and sometimes actually fear getting involved in 'political' action.

NGOs can influence and shape government policies and practices through approaches such as:

- Simple one-on-one talks and sharing of reading materials / reports (with pictures and diagrams).
- Calling for forum or coordination meetings or securing invitations to such meetings.
- Organising national consultations or forming a network of advocates.

7.3.3 Shared issues: Government and community-related issues that can act as barriers to linking community based disaster risk management with government policy and practice

Different perceptions of risk

The most important perception *of* risk (that identifies who is most vulnerable, how they are vulnerable and why this is) is held by those actually *at* risk. This perception can be captured through a CRA process. While it is not possible to remove all risks, it is feasible, depending on available resources and the will to do so, for some risks to be reduced. But different perceptions of risk, particularly between 'officials' and communities, lead to different decisions regarding what are acceptable levels of risk to aim for (see Figure 2.6). This has consequences in terms of the measures that are undertaken. Therefore different perceptions of risk can cause lack of coherence between a government's agenda and those of local communities. And if a CRA process is undertaken that emphasises the perspective of those affected, it is rare for local government officials to participate.

A wide cross-section of local participants, including local government officials, should engage in CRA.

*Lack of trust**

Differences in attitude and ideology can hinder interaction between communities / NGOs and governments, creating lack of trust. From a government perspective there can be a tendency to assume that community members are ill equipped to analyse risk, make effective risk reduction decisions and propose feasible government interventions. From a community / NGO perspective there is a tendency to assume that governments are unwilling to act in the best interests of *all* citizens regardless of their political affiliation, influence or power. These opinions generate an environment where genuine partnership is hard to achieve. Lack of trust is a considerable barrier to progress with scaling-up CBDRM and addressing some of the underlying causes of risk.

Those engaged in advocating CBDRM need to be aware that the subject has been developed and associated with grass-roots initiatives. The onus is therefore on those advocates at the grass-roots level to find ways to engage governments as *partners* in CBDRM. For example, typically NGOs and communities devise CBDRM initiatives and *then* look to government to fund aspects of the plan. Governments are not invited to be a part of the CBDRM process from the outset. In contexts with a history of armed conflict this can be particularly challenging.

Assumptions regarding the relationships between governments, NGOs and communities need to be set aside and replaced with research and real experience in specific contexts. Strong leadership and good will from government and civil society is required to build the trust needed for CBDRM partnerships.

Lack of integration of disaster risk reduction in development

DRR is not a separate sector, like health or education, but a cross-cutting approach that should influence relief, recovery, rehabilitation and development planning of all types in areas threatened by disaster. In practice however, DRR is commonly considered to be a series of interventions (such as early warning systems or disaster preparedness training) implemented *alongside* 'normal' relief and development activities as opposed to *within* them. This has serious implications for the

sustainability and scale of CBDRM. If CBDRM is considered to be additional to relief and development planning and budgeting then it is competing with other important issues and can easily be relegated to a position of minor importance. This is particularly the case in areas that have not recently experienced a disaster. Communities, NGOs, and governments all struggle to appreciate that DRR, including CBDRM, should be an integral part of relief and development decision-making.

Demonstrating the link between disasters and development is thus crucial across multiple levels.

7.3.4 Donors' disaster risk reduction policy and practice

This research has highlighted several challenges in linking CBDRM with government policy and practice. However, by addressing the two issues of 'lack of financial resources' and 'low government capacity for CBDRM', progress with other challenges should be possible (for example, 'competing priorities', 'lack of government systems and structures to support CBDRM', and 'lack of integration of DRR in development'). Donor institutions therefore can play a very significant role in helping to create a national political environment supportive of CBDRM.

Donors however argue that in some countries they struggle to support governments directly (perhaps due to poor governance), although there is increased momentum for direct budgetary support. They also argue that it is not appropriate for them to 'dictate' what country governments should be prioritising: if a government is not interested in supporting CBDRM and integrating DRR into its relief and development programming, there is little they can do[270]. Another factor that can influence donor support for CBDRM relates to how far it addresses the underlying causes of vulnerability. This can become too politicised for donors.

There are, then, complexities surrounding the role of donors and how they relate to country governments on the subject of DRR. However, even when a donor is committed to the principle of CBDRM, they themselves also face challenges. In 2007,

[270] For further information, see Tearfund and UN/ISDR (2007)

a review of institutional donor progress with mainstreaming DRR was undertaken (see Tearfund and UN/ISDR, 2007). This review found that donors face the following challenges:

1. Priorities are dictated by others: donors feel they should not dictate to governments that they *must* link CBDRM with government policy and practice.
2. Personnel: donors are affected by a lack of knowledge and awareness among their staff on DRR concepts and practice.
3. Mainstreaming fatigue: some donor organisations are suffering fatigue over the need to integrate numerous crosscutting issues (such as gender and the environment).
4. Relief – development divide: DRR 'falls in the gap' between humanitarian aid and development, and is thus not prioritised by either.
5. Coordination: DRR involves multiple stakeholders and requires very significant levels of coordination, but as with recipient country governments, there may not be systems and structures in place to aid this.

7.4 Conclusion

This chapter has identified challenges in linking CBDRM with government policy and practice. Methods to overcome these challenges have also emerged through the research. By addressing these issues the sustainability and scale of CBDRM can be enhanced.

7.4.1 Summary of gaps in knowledge addressed by this research

- Development of conceptualisation to express the challenges in linking CBDRM with government policy and practice (see Figure 7.1).
- The identification of *six government-related 'top-down' issues*[271].
- The identification of *three community-related 'bottom-up' issues*.
- The identification of *three shared issues* between government and community.

[271] With a further two sub-issues

- The identification of *five challenges* faced by donor institutions that impinge upon their ability to support the DRR function of recipient governments (see Chapter 7.3.4).

Other issues of relevance that this research has identified include:

- A combination of 'top-down' and 'bottom-up' is necessary to attain sustainable CBDRM through CRA on a scale befitting the need (see Chapter 2.2.5).
- Local government must be a key stakeholder in CBDRM, and as such 'democratic decentralisation' and good governance (see Chapter 2.4.2) are of paramount importance.

8 CONCLUSION

8.1 Introduction

In its aim to investigate the relationship between CRA and DRR, this research has demonstrated the importance of linking government policy and practice on DRR with CBDRM, and addressing the underlying causes of vulnerability. While important in their own right, these subjects have also been considered in terms of their inter-connectedness with one another. Indeed they can be considered mutually reinforcing, as government level action is required to address many aspects of the underlying causes of vulnerability. However, even more pivotal to this research, and it is argued to DRR in general, is the emphasis on their relationship with CRA. But even improved understanding on this connection is insufficient for DRR to be accomplished. Contrary to much practice, CRA, engaging government officials from the outset and incorporating an investigation into the underlying causes of vulnerability, must not be segregated from action planning but must be fully synchronised with a CBDRM process.

Although risk assessment is acknowledged among the 'principles and practice' of disaster risk management (see Chapter 4.2), it is currently not given adequate impetus. CRA (and risk assessment in general) should have a special place within DRR. It is a 'key' that can be used to unlock several barriers to progress. Because of its intrinsic dynamic characteristics, it can change the understanding, awareness and perception of risk of those that engage in the participatory process, including its facilitators. It is not prescriptive, and can look both ways on the 'Pyramid of Principles' (see Chapter 2.2.6 and Appendix I). Through this process stakeholders can influence the development context to be more conducive towards DRR.

This research has highlighted how practical CRA methodologies have lagged behind theoretical understanding regarding the relationship between local manifestations of vulnerability and risk and the causes of such conditions. Likewise a gap has existed between CRA and action planning. The development and testing of the CRA tool 'Participatory Assessment of Disaster Risk' (see Appendix X) has helped to bridge

these gaps, and in the process has raised several issues. Also, the identification of good practice CBDRM through a project called 'Turning Practice into Policy' has formed the basis of much data. These two components of the research have been supplemented with semi-structured interviews and personal observations.

This chapter draws on the preceding data analysis to highlight several key conclusions of the research, as follows:

- Firstly, each of the elements of CBDRM investigated in this research (namely CRA, addressing the underlying causes of vulnerability and government involvement) are mutually reinforcing and need to be linked and interconnected.
- Secondly, the research highlights how CRA can be used to link government policy and practice with methods of addressing the underlying causes of vulnerability.
- Thirdly, the research highlights how CRA can be used to link government policy and practice with CBDRM.
- Fourthly, the research concludes with the observation that the engagement of government stakeholders in a CRA process that investigates the underlying causes of vulnerability actually aids the synchronisation of CRA with CBDRM.

The chapter also contains a section on other issues emphasised in the research, and ends with a list of recommendations and some closing remarks.

8.2 Summary Conclusions

8.2.1 Community risk assessment, addressing the underlying causes of vulnerability and government involvement are mutually reinforcing elements of community based disaster risk management

A critical finding of the research was its emphasis upon the need for multiple stakeholder partnerships to address underlying causes in any CBDRM process[272]. In particular, the importance of the involvement of local government in the CRA process was emphasised. Engaging local government officials in CRA opens up opportunities for commonly held perspectives on the cause of disasters to be challenged, by shifting

[272] Chapter 6.3.1: 'Engage local government in the community risk assessment process', and 'Develop a partnership between local and external facilitators'

emphasis away from the occurrence of a hazard and towards a greater awareness of people's vulnerability. This shift in perspective could be even greater when disaster risk is linked to an investigation into the underlying causes of vulnerability and not just the existence of unsafe conditions.

Such a strategy, with a social change agenda, goes beyond the occasional invitation by NGO and CBO facilitators for government officials to attend an opening community meeting or workshop (see Chapter 2.3.5). It calls for active engagement in the process. It also goes beyond the common motivation for NGOs and CBOs to involve government officials at all in CBDRM, which is dominated by a desire for resources to fund structural mitigation measures. This only consolidates a limited awareness of the links between disasters, risk and development and thus limits the sustainability and effectiveness of CBDRM.

Through local government's involvement as a stakeholder in CRA, the process is best positioned to identify underlying causes of vulnerability and subsequently, through CRA's connection with action planning, address these issues through CBDRM based on partnerships between communities and 'outside' stakeholders[273].

8.2.2 Community risk assessment can be used to link government stakeholders with methods of addressing the underlying causes of vulnerability

Through the inclusion of local government in CRA various issues identified[274] as being related to the underlying causes of vulnerability may be addressed (see Chapter 6.2). In particular:

- Concerns over poor governance and lack of trust in government.
- Divergent perceptions on the causes of disaster.
- The lack of participation of local people in development decision-making, which limits opportunities to address the underlying causes of vulnerability.
- Preconceived ideas which limit the effectiveness of the CRA / CBDRM process.
- Inadequate links made between DRR and development.

[273] Chapter 6.3.2: 'Develop partnerships with stakeholders'
[274] Raised by communities, facilitators, other stakeholders, and through personal observations

- The need for advocacy.
- Government's emphasis on hazard control rather than vulnerability reduction.
- Vulnerable conditions as a manifestation of a denial of access to desired assets.
- Government policy on disaster management having limited practical application.

However a specific risk in engaging government officials in CRA is that the dynamic of including a resource provider in a community-based exercise can reduce the quality of the process due to demands placed on the resource-provider[275]. The skill of the facilitator is therefore of paramount importance (see Chapter 6.3.1[276] and 8.2.5).

8.2.3 Community risk assessment can be used to link government stakeholders with community based disaster risk management

This research has explained how CBDRM has been gaining increased recognition in recent years and has resulted in some significant progress in the reduction of risk among many local communities (see Chapter 2.2.5). However CBDRM has its limitations, often phrased as being in association with its sustainability and scale. For example, CBDRM can give insufficient emphasis on risks that have not been experienced locally. This has serious implications in terms of climate change, and for low-return period hazards such as earthquakes or tsunamis. Physical measures, complimenting the non-structural, are likely to have costs beyond the means of local communities. Flood risks, a focus of attention in the primary fieldwork location of Bihar, cannot be tackled in an upstream community without generating downstream consequences. And finally, and most relevant to this research, factors influencing the creation and maintenance of risk experienced in a local community are most likely generated beyond the confines of that community (see Chapter 6). Thus local

[275] Raised by Davis (1993, p.13) with the words, "The teams assessing social vulnerability must not in any circumstances be the same personnel who disperse assistance. The reason for this is obvious, namely if the person asking the questions about social deprivation or vulnerability is perceived as being from the provider body then a string of highly biased answers can be confidently anticipated in an attempt to secure financial support."
[276] 'Train and develop skilled facilitators'

measures are in danger of attempting to address *symptoms* of risk rather than the risk itself. This has obvious implications regarding the effectiveness of CBDRM.

In response to these limitations multiple stakeholders are required. In particular government has been highlighted as key (see Chapter 7.1.1). Through the engagement of government in CBDRM, underlying causes of vulnerability can be addressed (see Chapter 8.2.2) and scaling up of localised endeavours, more befitting of the need, can be encouraged.

However the research identified challenges linking CBDRM with government policy and practice. These were identified as falling into three categories comprising: Government-related 'top-down' issues; community-related 'bottom-up' issues; and shared issues between government and community (see Figure 7.1). Some of these, as described below, are of special interest because of the potential CRA has in helping to address them.

Top-down issues: Government-related issues that can hinder the allocation of resources for community based disaster risk management (see Chapter 7.3.1)

Competing priorities

Due to the demands of other sectors, such as health and education, DRR is rarely given a high priority. However, the awareness raising function of CRA is capable of highlighting how DRR should be integrated within relief and development policy and practice, rather than treated as a separate activity.

Lack of effective government decentralisation

CRA is an entry point for decentralised government. Its emphasis on participation tests the genuine level of commitment to the accountability goals of a decentralised system. However adequate funding needs to support local decision-making, and the macro level causes of vulnerability should not be overlooked.

Short time frames (and the desire for quick fixes)

Exposure through CRA to the way in which risk is integral to the lives and livelihoods of local residents, particularly in relation to the identification of underlying causes of vulnerability, raises awareness of the need for long-term vulnerability reduction as a part of sustainable development policy. This contrasts strongly against a perspective of disaster risk that ignores prevailing conditions and treats disasters as isolated events with a clear start and finish, when things return to 'normal'.

Bottom-up issues: Community-related issues that can hinder the flow of information on community based disaster risk management to government (see Chapter 7.3.2)

Poor appreciation of the government context

In many countries CRA and CBDRM stem from grass-roots action and thus have been supported by elements of the NGO sector[277]. Wherever this is so, the onus can be said to be on the NGO sector to introduce this approach to a wider set of stakeholders, particularly government (see Chapter 2.3.5). However NGOs and CBOs have been found to lack in sophistication regarding methods to interact with government. If a CRA process is undertaken in partnership with government stakeholders, rather than in isolation or near-isolation, opportunities for improved dialogue and understanding will result. Coordination and trust may then be cultivated that are steps in the important process of building good relationships (see Chapter 2.3.5[278]).

Lack of influence at government level

A poor appreciation of the government context, combined with a lack of advocacy skills or confidence and resources, hinder NGOs and CBOs from influencing government policy and practice. However, CRA could be considered an indirect method of encouraging government's to engage in a local participatory initiative, which is capable of leading a process of change in support of CBDRM.

[277] However, in countries such as Cuba and Vietnam, the government has driven CBDRM.

[278] "*Coordination* is the product of mutual respect and trust; *Trust* is a product of good working relationships between persons and organisations; *Good relationships* are a product of time spent together." (Professor Ian Davis in a presentation on the 'Twenty-Five Key Principles Of Disaster Management')

Shared issues: Government and community-related issues that can act as barriers to linking community based disaster risk management with government policy and practice (see Chapter 7.3.3)

Different perceptions of risk

Despite the logic in suggesting that those actually '*at* risk' hold the most important perception *of* risk, officials often have different perceptions than local communities (see Chapter 2.2.4). However, CRA is the tool that allows, and indeed encourages, all stakeholders to discuss risk and analyse different perspectives. In an effort to ensure sustainability this process seeks to find priority risks or vulnerabilities that can be targeted through partnership among all, or perhaps the majority, of stakeholders. Actions resulting from such a process are more likely to be complementary to one another and sustainable development than initiatives devised in isolation, either by communities, governments or other groups.

Lack of trust

From a government perspective there can be a tendency to assume that community members are ill equipped to analyse risk, make effective risk reduction decisions and propose feasible government interventions. A belief in the need for expensive structural measures to control the hazard perpetuates this perspective. From a community / NGO perspective there is a tendency to assume that governments are unwilling to act in the best interests of *all* citizens regardless of their political affiliation, influence or power. Corruption is also a factor hindering the proper support government's ought to deliver to citizens. These opinions and issues generate an environment where trust is lacking and genuine partnership is hard to achieve. CRA and CBDRM can demonstrate community strengths and abilities and can provide government's with an opportunity to demonstrate commitment to civil protection.

Lack of integration of disaster risk reduction in development

A CRA process, even facilitated with a humanitarian-minded agenda (see Chapter 5.2.3[279]), soon deviates from a dialogue on disasters into a discussion more relevant to the daily needs and aspirations of local participants. Therefore by engaging in a CRA

[279] Section on 'Developmental action planning may be considered inappropriate by humanitarian facilitators'

process, the links between disasters and development become clear. This understanding will aid actors at all levels and in all sectors as the natural conclusion from this awareness is to integrate DRR within 'normal' processes rather than treat it as a separate subject on the periphery of priorities.

8.2.4 The engagement of government stakeholders in a community risk assessment process that investigates the underlying causes of vulnerability aids the synchronisation of community risk assessment with community based disaster risk management

With a consideration of the issues described above, this section highlights the research findings pertaining to the link between CRA and CBDRM that could help draw all the identified issues together in support of a more sustainable CBDRM process with the potential for expansion beyond local community boundaries.

The research has emphasised that CRA needs to be more proactive in its aspirations to improve conditions through CBDRM. Assessment and action must be synthesised. This is in contrast with the all too common criticism, not least by local communities themselves, that CRA, and other forms of community assessment, are little more than 'data collection exercises' for the benefit of the outside agency facilitating them. Indeed, of even more concern is that CRA is capable of creating additional problems at a local level (see Chapter 2.3.4).

The research found that CRA should be designed as a method of action planning from its outset[280]. This influences all phases in the process, from preparation through securing of finance to the implementation of the plan. However, so as to avoid the process developing into a 'wish-list' of local needs devised locally and then presented to external resource-providers, the earliest engagement of the different stakeholders ought to be an aspiration[281]. This then enables decision-making and ownership to be shared, with positive ramifications for sustainability.

[280] Chapter 5.3.2: 'Design community risk assessment as action planning orientated from the outset'
[281] Chapter 5.3.2: 'Improve stakeholder participation in decision-making'

The research also highlighted that the analysis component of CRA should be emphasised[282]. This improves connectivity with the priorities of local stakeholders and enhances the uptake of non-structural mitigation that can be under-valued. Both these issues have positive implications in terms of encouraging a transition of government officials away from a 'command and control' modality to more of a community-based paradigm.

The underlying causes of vulnerability are likely beyond the means of a local community to address unless they are in a working partnership with other stakeholders capable of influencing the macro-level context within which risk is created and maintained. Advocacy is therefore an almost inevitable outcome of a CRA process linked to action planning that exposes why unsafe conditions exist for the poorest and most marginalised groups[283]. If government officials are engaged in the CRA process however and are in dialogue regarding the root causes of disaster from the perspective of the most vulnerable, then an initial step has been taken. Conceivably this approach is less confrontational than one whereby an NGO or CBO presents its analysis of a situation, undertaken 'in private', which demands changes at government level.

By investigating the underlying causes of vulnerability in partnership with government officials in a CRA process that is purposefully linked with CBDRM, some of the issues identified[284] in the research (see Chapter 5.2) become more significant. In particular:

Community risk assessment raises expectations

Although the presence of resource-providers in the assessment process could encourage bias to exaggerate needs, the development of a shared process among stakeholders also provides opportunities for dialogue. This dialogue can be used to manage community expectations to be more in line with government capabilities based on genuine constraints, and equally can be used to improve trust and

[282] Chapter 5.3.2: 'Emphasise analysis'
[283] Chapter 5.3.2: 'Advocate for the reduction in the underlying causes of vulnerability'
[284] Raised by facilitators, academics and practitioners, and through personal observations

relationships which depends on communities avoiding the presentation of exaggerated, distorted and biased information.

Community risk assessment changes the facilitators' perception of risk
With an open mind, those engaged in facilitating a CRA process are exposed to the likelihood that their preconceived perceptions on hazards, risk, vulnerability and capacity may be altered. CRA does not only raise awareness and aid local communities in their analysis of conditions. This characteristic of the process is encouraging when set against a context of seemingly entrenched differences in opinion between groups.

Local governments have preconceived notions regarding necessary actions
Engaging in a CRA process challenges preconceived notions.

Lack of stakeholder participation in decision-making
The scale of CBDRM is often small, or even miniscule, in comparison with scale of the need for reductions in disaster risk. Through the engagement of government officials though, and through the development of a concerted effort to reduce vulnerability and its causes, the scale of efforts has an improved chance of being increased.

8.2.5 Other issues emphasised in this research

Supplementary to the observations surrounding the investigation into the primary research objectives (as described in the sections above), in response to the secondary objectives of this research[285] various other issues of interest emerged:

- Despite progress towards CBDRM away from the dominant approach, it is the latter that is still the most common practice at a local level in fieldwork locations.
- Other than in a post-disaster context, the regularity of the hazard has significant bearing on the effectiveness of DRR. As floods are most common, and are exacerbated by their link with climate change (see Chapter 2.2.1), they

[285] To document the key principles of disaster risk management; and to identify the critical components of community risk assessment

provide a strong basis for a focus of DRR attention that can be used to raise the profile of the subject within development.

- There is a confusing breadth of terminology used by different stakeholders to describe similar (or the same) issues. An appreciation of the subtleties of these is a luxury of specialists operating at a distance from the grass roots where the realities of the concepts are felt. For example:
    - Capacities, resilience, coping mechanisms, and survival strategies.
    - Vulnerability referring to different sectors (social, economic, engineering, environmental).
    - Disaster Risk Reduction (DRR), Disaster Risk Management (DRM), Disaster Mitigation and Preparedness (DMP).
    - Community and community-based.
    - Community Risk Assessment (CRA), Vulnerability and Capacity Assessment (VCA), Capacity and Vulnerability Analysis (CVA), Participatory Vulnerability Analysis (PVA).
- The 'Hyogo Framework for Action 2005 – 2015' acknowledges community-based initiatives, but lacks teeth in terms of the application of this within the 'priorities for action' through agreement on defined targets. In particular, consideration given to risk assessments and the underlying causes of vulnerability are 'government friendly' rather than plain-speaking (see Chapter 2.4.3).
- Government progress on DRR in India at a national level (and State level, particularly in Orissa and Gujarat), still struggles to reach the grass roots level. A tension also exists between developmental ideologies, with one endorsing a 'command and control' philosophy and the other a decentralised local model;
- The ability of communities to identify causal factors of vulnerability became apparent.
- CRA is currently undervalued. Possible reasons for this are:
    - In a post-disaster context CRA may be considered a luxury by humanitarian workers focused upon the protection of lives in the short-term.

- In a developmental context, disasters are rarely regarded as a priority and thus this applies to disaster risk assessment also.
- Disaster risk assessment can be associated with technical and scientific 'expert' studies, rather than a participatory action planning based process.
- The subject is relatively new and, similar to DRR in general, can be misunderstood or lacking in apparent relevance.
- If undertaken with an open mind and without preconceived ideas of the findings, CRA can lead to the illumination of challenging issues that require comprehensive measures to address.

Special emphasis needs to be given to the demands placed on the CRA facilitator:

- The demands placed on the facilitator of a CRA process are high. These are only expanded under the findings of this research with its emphasis upon engaging government officials in the process from the outset (or very earliest opportunity), including an investigation into the underlying causes of vulnerability, and ensuring that CRA is linked with CBDRM. Advocacy skills are also a requirement. This has serious implications in terms of the selection and training of facilitators.

Finally, the methodological approach adopted was 'Action Research' (AR) (see Chapter 3.2.2). This lent itself to a rich and challenging research process over a six-year period. 'Reflections on undertaking action research in poor and vulnerable communities' (see Chapter 3.5.1) contains personal observations regarding the appropriateness of this approach[286].

8.3 Recommendations

The recommendations marked * will help to ensure CRA and CBDRM are better synchronised. 'CRA - CBDRM' is used to better establish this point.

[286] Further issues of interest regarding the research process are documented in Chapter 3.5.2 ('Patterns of application of action research tools') and Chapter 3.5.3 ('Practitioner and researcher')

*NGOs in partnership with local government should undertake a CRA - CBDRM pilot study as a component of an ongoing development programme**

A CRA - CBDRM process that engages local government officials and other stakeholders at an earliest stage, incorporates an analysis of the underlying causes of vulnerability and is purposefully linked to a long-term development programme should be undertaken. So as to maximise the level of local interest and political will, while capitalising upon available resources, this will probably need to occur in a location recently affected by disaster. Preferably this would be in a context where government decentralisation has been established with proven democratic credentials, as this will help to isolate key issues pertaining to CRA and CBDRM rather than illuminating more fundamental barriers regarding the interaction between local communities and government. Key areas that require attention include:

- The dynamic of including those with power and influence in the same process as vulnerable community members.
- The issues arising and consequences when local community members / leaders are included as part of the facilitation team.
- Methods of integrating scientific knowledge with local knowledge so as to ensure that risks yet to be experienced locally (through climate change for example) are reduced through adaptation (see below).

*Organisations should develop new or update existing CRA methodologies**

CRA methodologies should improve upon the 'Participatory Assessment of Disaster Risk' methodology while ensuring that the following aspects become synonymous with CRA:

- The underlying causes of vulnerability are investigated.
- The process is explicitly designed to reduce risk through its link with action.
- A significant degree of attention is given to the analysis of risk.
- Capacity assessment / analysis is given significant attention.
- Multiple stakeholders, including local government officials, are engaged from an early stage.

*Promote CRA as a complementary component of the Hyogo Framework for Action 2005 – 2015**

An integrated top-down and bottom-up approach to DRM is required. However, despite positive emphasis on community-based action, even the HFA fails to apply this in relation to risk assessment. Instead it emphasises a need for greater expert awareness and knowledge on risks[287] and consequently does not promote CRA. This, combined with a divergent and limited perspective on the underlying causes of vulnerability in comparison with the social vulnerability literature, has significant implications regarding the attainment of at least one of the HFA strategic goals[288]. The 'Global Network of NGOs' for DRR may be best placed to draw attention to this deficiency and advocate for change.

*Comprehensive CRA - CBDRM training programmes should be provided by NGOs for local facilitators and by national governments for local government officials[289] in hazard-prone locations**

In addition to typical CRA related issues the training programmes should emphasise:

- The importance of the analysis of information / data.
- The need to ensure multi-stakeholder partnerships in CRA and CBDRM particularly including local government officials, not least to gain an improved awareness of the different perceptions of risk and priorities for action.
- The practical application of training – links between theoretical understanding and the practical application in the field are required.
- Advocacy skills for NGO / CBO workers.

Improve understanding of the interaction between disaster risk and insecurity

Disasters are typically associated with their natural hazard 'triggers', despite a growing appreciation of the role that vulnerability to these hazards has in the creation of unsafe conditions. As insecurity through conflict is a highly significant influence upon vulnerability to natural and other hazards, as well as a risk in itself, its

[287] In Priority for action No.2 (Identify, assess and monitor disaster risks and enhance early warning)
[288] Strategic goal No.1: The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction
[289] This could very well require the support of donor institutions

relationship with 'natural' disasters needs to be better understood. This is particularly relevant in a context where insecurity and conflict may be associated with natural resource depletion and a lack of natural resources (such as water). In such circumstances disasters and conflict are inextricably linked.

Focus on climate change related risks

Climate change will expose already vulnerable communities to risks of a type and scale that hitherto have not been experienced. DRR, and indirectly CRA and CBDRM, should focus more attention on facilitating a process that supports local adaptation to such conditions. In particular areas exposed to flooding, which in many regions is exacerbated by climate change and is already affecting more people than any other natural hazard, would make a logical entry point for any additional resourcing so as to help ensure development activities in such locations are sustainable in the face of flooding and other risks. More specifically, climate change adaptation should inform CRA processes.

8.3.1 Closing remarks

Stemming from this research, several recommendations for future work have emerged. A key theme among them revolves around the sense that CRA is currently undervalued. However CRA, and disaster risk assessment in general, should be firmly established as a 'principle' of CBDRM, which itself is rapidly gaining increased recognition as an important and necessary means to reduce risk. This implies that CRA and CBDRM must be synchronised as a single process: The two are inseparable if sustainability in risk reduction is to be accomplished. Furthermore a CRA that engages government officials, among other stakeholders, in a process that investigates the underlying causes of vulnerability, and is based on the premise that action will be taken on its findings, is capable of instigating progress in the resilience of communities and nations.

APPENDIX A

Literature, Conferences and Workshops Significant to this Research

A.1 Literature

This is a list of literature considered to be most significant to the focus of this research. A brief explanation is provided, and where relevant a note on this thesis author's relationship with the literature author(s) / editor(s) is added.

ADPC (2006) *Critical Guidelines of Community Based Disaster Risk Management* (proceedings of workshop 24 – 27 January 2006 in Bangkok). Bangkok: ADPC

The participants of the workshop (predominantly practitioners from south-east Asia) were tasked with commenting on an early draft of the book, which was subsequently edited accordingly. The result is of importance as it provides a discussion on principles of CBDRM; something that there is a lack of, predominantly on account of the importance of CBDRM processes over products (practical actions), as products are highly context specific.

The initial draft, workshop and editing were the responsibility of Zubair Murshed, personally known by the author, with Professor Ian Davis. The author participated in the workshop (see A.2).

Allen, K. (2006) 'Community Based Disaster Preparedness and Climate Adaptation: Local Capacity Building in the Philippines' in *Disasters,* 2006, 30(1), pp.81-101

Allen's work on CBDRM in the Philippines has interesting overlaps with this research. She emphasises risk from the perspective of vulnerable groups, which places it alongside people's daily lives and livelihoods. This is an important concept for sustainability and relevance. Furthermore, much of Allen's experience comes from research with the Philippines National Red Cross Society. In this regard there is a similar entry point to this research, which mainly comes from an NGO perspective / experience.

Anderson, M. and Woodrow, P. (1989) ***Rising from the Ashes: Development Strategies in Times of Disaster.*** **London: Intermediate Technology**

This book is significant on account of the fact that it introduced the Capacities and Vulnerabilities Analysis (CVA) framework, emphasising in a practical way that people's strengths and resourcefulness should be given equal significance to their weaknesses and needs. The book also emphasises participation, building on earlier work in this area. Perhaps on account of the book expressing key messages in practical ways led towards its status as an influential and important read, particularly for humanitarians.

Mary Anderson is known by the author on account of a meeting in Cambridge, Massachusetts on 27 June 2006. The author interviewed Peter Woodrow in Cambridge, Massachusetts on 12 August 2004.

Bankoff, G., Frerks, G. and Hilhorst, D. editors (2003) ***Mapping Vulnerability: Disasters, Development and People.*** **London: Earthscan**

As the introduction to this book explains, in their different ways, all the contributors (of which there are around 20) explore how vulnerability provides a conceptual link in improving our understanding of the relationship between disasters, development and people. No solutions to vulnerability reduction emerge, but rather a picture of the overall dynamics of the subject. One point of agreement however is that change is not going to happen without the consistent pressure of local resistance and social movements against policies and practices that make people more vulnerable. Consequently there is strong synergy with aspects of this research. Key chapters of interest are by Allan Lavell, Annelies Heijmans, Ian Davis, Zenaida Delica-Willison and Robin Willison, and Ben Wisner.

Cannon, T. (2003) ***Reducing Disaster Risk by Building on Effective Vulnerability and Capacity Assessment: Report of an Evaluation of the VCA Process.*** **Greenwich: International Federation of Red Cross and Red Crescent Societies**

Among NGOs Vulnerability and Capacity Assessment (VCA) became synonymous with local risk assessment. 'VCA' was, and still is, a commonly used term almost regardless of one's experience in using it or knowing what it really means. As it was

promoted throughout the family of Red Cross and Red Crescent National Societies in the 1990s, in an endeavour to encourage the humanitarian goals of the organisations to encompass a more proactive disaster preparedness modality, it was interpreted and used in different ways. Indeed, it was used in ways that it was not intended for. Consequently Cannon undertook an evaluation of VCA for IFRC, with reference to other methodologies. This led to the development of a revised set of VCA publications (IFRC, 2007). The account of this evaluation experience is highly revealing.

The author knows Terry Cannon, on account of attendance at several meetings, workshops and conferences.

Chambers, R. (1997) *Whose Reality Counts? Putting the First Last.* London: Intermediate Technology Publications

Chambers is credited with leading the focus on meaningful participation of local stakeholders in development. His work on Participatory Rural Appraisal, now known as Participation Reflection and Action (PRA) and Rapid Rural Appraisal (RRA) tools and techniques has led to their use on a global scale. CRA processes will commonly draw on these tools and techniques, rather than use tools and techniques developed purposefully for CRA. As the skill of the facilitator undertaking CRA is strongly correlated with the effectiveness of the process in leading towards sustainable community-based action, the relationship between PRA/RRA and CRA is important.

DiMP (2005) Report on the 'International Workshop on Community Risk Assessment' in Cape Town, 31 May – 2 June 2005. Cape Town: University of Cape Town, Disaster Mitigation for Sustainable Livelihoods Programme (DiMP)

This workshop was at the forefront of the subject of CRA and was in follow-up to the 'Social Vulnerability and Capacity Analysis' workshop held in Geneva in May 2004. It pulled together academics and practitioners with significant experience and opinions on the future of the subject and sought to find ways to ensure that CRA practice was improved and became more common-place as a tool in the risk reduction decision-making process. As such the workshop led to the creation of the ProVention Consortium CRA Toolkit (a web-based inventory of CRA methods and case studies, with guidance notes, and a network of CRA specialists).

The author attended this workshop (see A.2).

Heijmans, A. and Victoria, L. (2001) ***Citizenry-Based and Development-Oriented Disaster Response: Experiences and Practices in Disaster Management of the Citizens' Disaster Response Network in the Philippines*****. Quezon City: Centre for Disaster Preparedness**

The Philippines, a highly hazard-prone country, is a fertile environment to find examples of DRR at all levels; from the work of community based organisations in a village, NGOs operating more broadly but with a local focus, and through to national government policy and practice including a legal framework for risk reduction. The work of Heijmans and Victoria is varied and dynamic, often revealing illuminating insights from fieldwork. This particular book documents experience of the 'Citizen's Disaster Response Network' (a Centre for Disaster Preparedness initiative) and is thus a comprehensive account of how disasters are mitigated within the context of the priorities of the people that they can most affect.

The author knows Lorna Victoria on account of visiting her at the Centre for Disaster Preparedness (CDP) for the purpose of research in April 2005, and due to attendance at several workshops and conferences. The author knows Annelies Heijmans because she attended a workshop, convened on 14 December 2006, to discuss a report written by the author on 'Good Practice CBDRM' (a component of this research).

Lavell, A. (2003) ***Local Risk Management: Ideas and Notions Relating to Concept and Practice*****. Central America: CEPREDENAC**

Lavell's work is exemplary in terms of expressing how DRR should be integrated within broader issues of local risk management. In doing so he highlights, through practical experience in Central America, how the engagement of numerous local stakeholders with different agendas mesh in a process that leads towards increased resilience to threats, including disasters. In particular the politicised aspects of vulnerability reduction are revealed.

The author knows Allan Lavell through attendance at the 'International Workshop on Community Risk Assessment' (see A.2).

Maskrey, A. (1989) *Disaster Mitigation: A Community Based Approach.* Oxford: Oxfam

While questioning of the 'naturalness' of natural disasters was already underway (in the 1970s particularly, although in some disciplines much earlier), Maskrey articulates in this landmark book how there is a tendency to mitigate disasters by focusing on hazard control. This, he argues, underplays the now well-known and important element in creating risk of disaster, vulnerability to the hazard. As an antithesis to the 'dominant approach' to disaster mitigation then, he promotes a community-based method (the 'political economy approach') that places vulnerability and risk in the context of people's lives and livelihoods. As such poverty, and the politics of it, is found to be at the heart of people's own perspective on risk. Without tackling these underlying causes, vulnerability to hazards will remain and unless all hazards are avoidable (which is not realistic) risk will not be satisfactorily reduced. This book paves the way for emerging perspectives on disaster risk management, which in turn have influenced how CRA is undertaken.

Parker, D. editor (2000) *Floods: Volume I and II.* London: Routledge

These comprehensive volumes contain multi-disciplinary perspectives on flooding. As flooding has become a highly significant problem for the State of Bihar and its people, and is set to remain a major issue on account of climate change and the inhabiting of floodplains internationally, these books provide several relevant papers (for example those by Parker, Fordham and Rasid).

ProVention Consortium (2008) *Community Risk Assessment Toolkit* Available at: www.proventionconsortium.org [January 2008]

See DiMP (2005). The ProVention Consortium CRA toolkit contains the CRA methodology developed by the author with colleagues at Tearfund ('Participatory Assessment of Disaster Risk'), and two case studies written by the author of this thesis – one on DRR in Bihar and the other in Andhra Pradesh, India (Tearfund, 2005a and 2005b). The author is also a member of the CRA network (email-based discussion network).

The author knows the staff of the ProVention Consortium, Margaret Arnold (and her predecessor David Peppiatt) and Bruno Haghebaert, on account of interviewing them for the purpose of research and attendance at several workshops and conferences. The author also knows Dr Ben Wisner, responsible for the writing of guidance notes in support of the CRA Toolkit, on account of attendance at several workshops and conferences and as a team member on a consultancy project.

Shaw, R. and Okazaki, K. editors (2004) ***Sustainability of Community Based Disaster Management Practices in Asia: A User's Guide*****. Kobe: UNCRD**

The major challenges of community based disaster management (CBDM) are identified in this book as revolving around the sustainability of efforts at the community level, and the incorporation of CBDM issues at the policy level. These two issues are critical to the focus of this thesis, which considers the identification of the underlying causes of vulnerability from a community-based perspective and some strategies to aid their removal. The 'tools' for policy makers, national disaster managers, local disaster managers, trainers and community workers presented in the book, further helps to segregate key issues that can be isolated for comparison with personal experience in case study locations. The preceding book (Shaw and Okazaki, 2003) titled 'Sustainability in Grass-Roots Initiatives: Focus on Community Based Disaster Management', has its key findings picked up by the 2004 book but goes into more depth in selected locations, including India.

The author knows Professor Rajib Shaw on account of him being the author's team leader for a consultancy project and attendance at the 'World Conference on Disaster Reduction' and the 'International Workshop on Community Risk Assessment' (see A.2).

Thompson, M. and Gaviria, I. (2004) ***Cuba: Weathering the Storm: Lessons in Risk Reduction from Cuba.*** **Boston: Oxfam America**

Dr Ben Wisner, who contributed to this book, states that, "Cuba shows us a rare example of successfully building community-based disaster management into a national risk reduction programme. Examining Cuba's experience, Oxfam America argues that strengthening community capacity, strong coordination of local actors and investing in social capital are determinate factors for successful risk reduction." The

reasons why the links between local and higher levels, as demonstrated by the Cuba experience, are relatively successful are of significant interest. Thus the partially hypothetical question considered by the author of this thesis is, "Are they relevant elsewhere?"

The author knows Dr Ben Wisner on account of the reasons provided above.

Twigg, J. (2004) *Disaster Risk Reduction: Mitigation and Preparedness in Development and Emergency Programming* (Good Practice Review Number 9) London: Overseas Development Institute

Through the consideration of 'Community-Level Risk Reduction' and directed by the identification of 'good practice' this book reiterates and strengthens a growing theme: community-level initiatives alone can be dwarfed by the causes of vulnerability, and are therefore too isolated. Gaps in knowledge and practice that need to be addressed in order to have 'scaled-up' relevance are presented. These are challenges directly relevant to this thesis. Chapters on 'Partnerships and Stakeholders' and 'Participation', are relevant and helpful on account of the fact that they draw attention to the need for multi-stakeholder engagement in a multi-discipline and multi-level problem, while outlining some difficulties.

The author knows Dr John Twigg on account of attendance at several meetings, workshops and conferences.

Winchester, P. (2000) 'Cyclone Mitigation, Resource Allocation and Post-Disaster Reconstruction in South India: Lessons from Two Decades of Research' in *Disasters,* 24(1), pp.18–37

Winchester's extensive experience in India provides a rich account of how the risks associated with cyclones and flooding have traditionally been perceived which has influenced methods of mitigation. The changes in perspective of risk that came about largely in the aftermath of a cyclone in 1977 are explained, with significant attention given to issues of local power relations and ways in which NGOs could help to bypass what to date has appeared to be stubborn barriers to sustainable and significant risk reduction. As such there are many lessons to be learned and ideas to be investigated within the context of this research.

Wisner, B., Blaikie, P., Cannon, T. and Davis, I. (1994/2004) ***At Risk: Natural Hazards, People's Vulnerability and Disasters.*** **London: Routledge**

The first edition of 'At Risk' is considered a landmark book on account of its consolidation of a growing appreciation of the importance of vulnerability in the generation of risk. The 'Pressure (or Crunch) and Release' models visually portray this emphasis on vulnerability. Through these widely recognised models, the concept of risk was helped to cross a hitherto unfamiliar boundary between theory and practice. The second edition does not deviate from the first's fundamental basis, but adds new perspectives and examples drawn from numerous experiences. The 'Crunch Model' forms the basis of the CRA methodology investigated as part of this research.

The author knows Dr Ben Wisner, Terry Cannon on account of reasons provided above and Professor Ian Davis.

A.2 Conferences and Workshops

Photograph A – 1: Social Vulnerability and Capacity Analysis Workshop Participants

Source: ProVention Consortium

Photograph A – 2: Participants of International Workshop on Community Risk Assessment

Source: ProVention Consortium

Table A – 1 contains a list of the conferences and workshops, attended by the author, of relevance to this research. A brief explanation is provided.

Those considered especially significant to the focus of this research are in bold.

Table A – 1: Conferences and Workshops

Date	Name	Details	Comments
April 2002	Disaster Mitigation and Preparedness Workshop	Organised by Tearfund and held in Tezpur, Assam, India	Capacity building training of Tearfund DRR partners in India, including EFICOR and Discipleship Centre (research partners). CRA exercise undertaken in flood affected communities

Date	Name	Details	Comments
25 – 26 May 2004	**Social Vulnerability and Capacity Analysis Workshop** (see Photograph A – 1)	**Organised by the ProVention Consortium and held in Geneva. Author's attendance sponsored by Tearfund**	**CRA experts were convened to share their experiences of different methodologies. The researcher presented, with research partners[i], details on progress developing and testing a CRA tool ('Participatory Assessment of Disaster Risk') in India.**
19 – 22 January 2005	World Conference on Disaster Reduction (WCDR)	Organised by UN/ISDR and held in Kobe, Japan. Author's attendance sponsored by Tearfund	Researcher co-presented with Tearfund on 'Turning Practice into Policy' (see Chapter 3.4.3), focusing on linking CRA and CBDRM with government and donor policy and practice.
31 May – 2 June 2005	**International Workshop on Community Risk Assessment** (see Photograph A – 2)	**Organised by the ProVention Consortium and held in Cape Town, South Africa. Author's attendance sponsored by the ProVention Consortium (while an employee of Tearfund)**	**Critical analysis of risk assessment methodologies, with detailed discussions on the links between CRA and action planning, and the links between CRA and government policy and practice.** **Formation of Community Risk Assessment Toolkit[ii] (ProVention Consortium, 2008).**

[i] Mr. Roy Alex, EFICOR and Mr. Alex Joseph, Discipleship Centre

[ii] The CRA Toolkit includes guidelines on 'Participatory Assessment of Disaster Risk' (PADR) and the Indian case studies written by the researcher (Tearfund, 2005a and 2005b)

Date	Name	Details	Comments
24 – 27 January 2006	**Critical Guidelines: Community Based Disaster Risk Management**	**Organised by the Asian Disaster Preparedness Centre (ADPC) and held in Bangkok. Author's attendance sponsored by ADPC (while an employee of Tearfund)**	**The twenty-five participants of this Regional (South-East Asia) Workshop reviewed the first draft of the guidelines and provided recommendations in establishing the function, format and focus of them. The final document is the product of these discussions (see ADPC, 2006).**
5 – 7 June 2007	Global Platform for Disaster Risk Reduction	Organised by the UN/ISDR and held in Geneva. Author's attendance as independent consultant sponsored by Tearfund	A follow-up to the WCDR where the author presented findings of a review of progress mainstreaming DRR among donor institutions (Tearfund and UN/ISDR, 2007) to a closed meeting of donors.

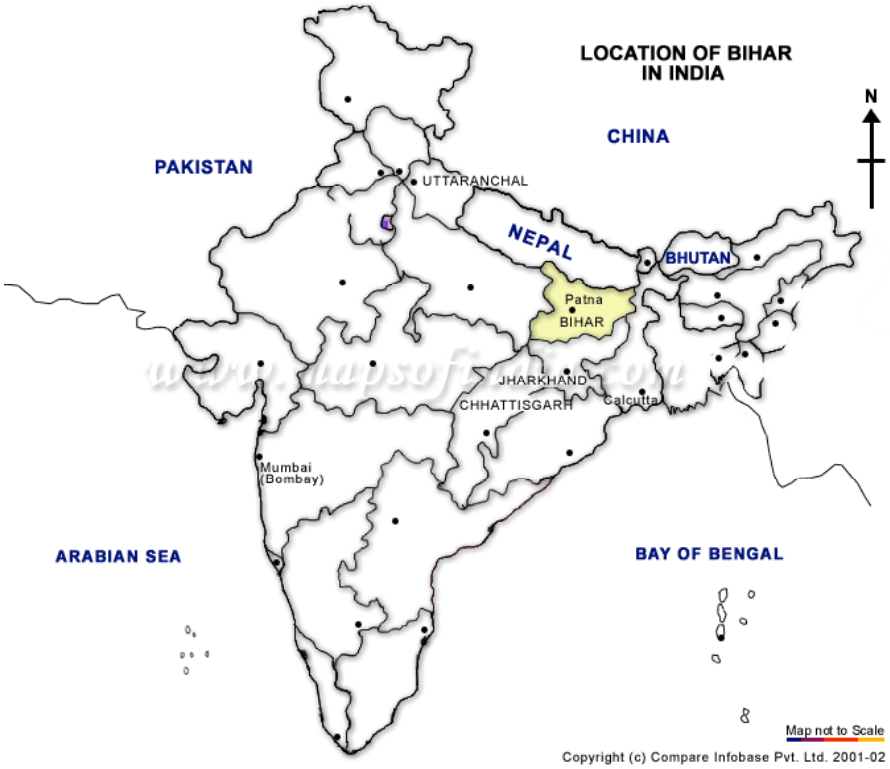
APPENDIX B

Bihar Case Study

B.1 Introduction

The primary fieldwork undertaken for this research was in Dharbanga District, Bihar, India (see Figure B – 1a and B – 1b). Although a wide array of research was undertaken in other parts of India and in other countries, much of the data collection referred to in the thesis refers to the Bihar context. This section therefore provides a brief description regarding disaster risk within the context of the State of Bihar and the CBDRM work of research partner Discipleship Centre[i].

Figure B – 1a: Map Showing Location of Bihar in India



Source: www.mapsofindia.com

[i] For further details on Discipleship Centre see Appendix Z and Tearfund (2005a)

Figure B – 1b: Map Showing Location of Dharbanga District in Bihar

Source: Tearfund (2005a)

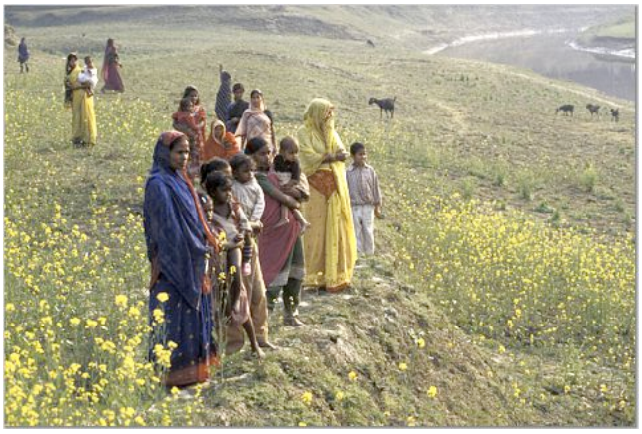
B.2 Background

Bihar is one of the poorest states in India. It has a total population of 86 million people, the vast majority of whom live in rural areas (See Photograph B – 1a and B – 1b). In fact Bihar has the highest rural population in India, as well as the lowest rural incomes in the country. Over 50 per cent of the population lives below the poverty line. Bihar is also one of the most flood-prone states in India. According to estimates by the World Commission on Dams, 56.5 per cent of India's flood-affected people are from Bihar. Three-quarters of them live in North Bihar.

Photograph B – 1a: Low Caste Villagers Work the Land for Higher Caste Landowners

Source: Caroline Irby/Tearfund

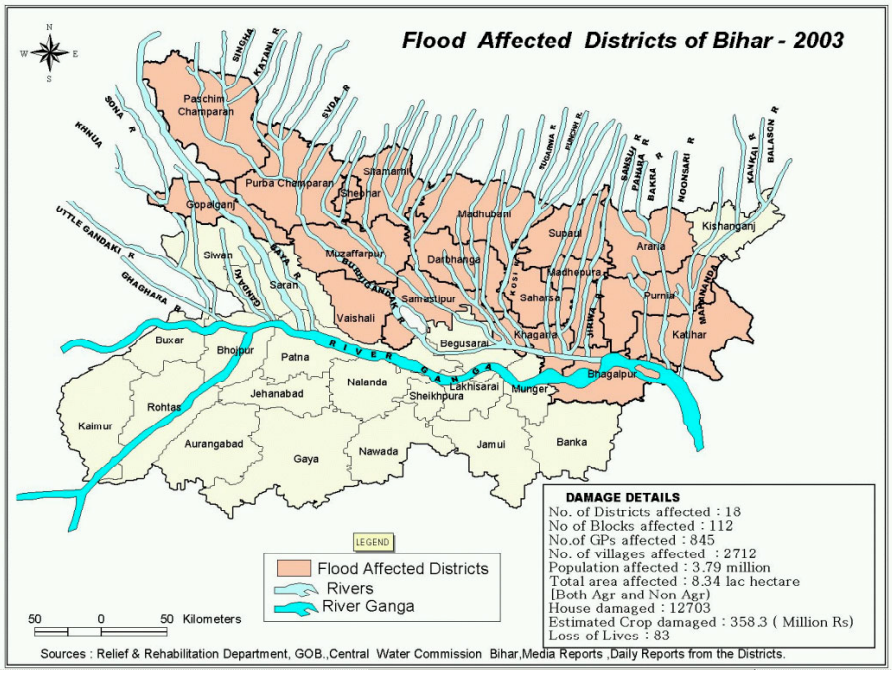
Photograph B – 1b: The Fertile Flood-Plains



Source: Caroline Irby/Tearfund

North Bihar contains eight major river basins, all of which drain into the Ganga (Ganges) river (see Figure B - 2). Of these the Kosi and Bagmati rivers affect the fieldwork locations in Dharbanga district. During the monsoon season (approximately June to August), these tributaries flood large tracts of land. The intensity and duration of flooding can vary, but large numbers of villages are consistently affected, and their populations forced to evacuate to higher land (see Photograph B – 2).

Figure B – 2: Flood Affected Districts of Bihar 2003



Bihar is also in a seismically active zone. In the last 60 years four earthquakes exceeding 8.0 on the Richter scale have occurred in the Himalayan region. Indeed on 15 January 1934 an earthquake measuring 8.0 on the Richter scale struck Bihar itself.

Dharbanga district is typical of much of North Bihar. Villages are characterised by yearly floods, high levels of poverty due to a lack of employment opportunities (see Box B – 1, and Table B - 1), very limited infrastructure (poor communication channels, no public transport, limited schooling) and a strong caste structure. In fact a feudal-like system is in operation whereby the majority of lower-caste villagers live on land belonging to higher-caste landowners, in return for working in their fields.

Box B - 1: Common Livelihood Activities for Local Community Residents in Fieldwork Locations

Harvesting (mainly dhal and wheat) (March – April)
Mango selling (July – August)
Cobblers
Brick making
Day labouring
Agricultural labouring
Rickshaw pulling
Mud cutting
Wood cutting
Branch selling
Migration for labouring (commonly cleaning work)

Table B – 1: Daily Activities for Rural Residents of a Typical Village in Northern Bihar

Women	
4am	Bathe
4am – 8am	Prepare food (whatever is available; typically vegetables, rice, japatti)
8am – 6pm	Livelihood activities, plus look after children and household work
6pm	Take money from men and buy food for dinner
8pm	Prepare food
9pm	Sleep
Men	
8am – 6pm	Livelihood activities
6pm	Return home with money
9pm	Sleep

B.3 Typical Flood Impact

Flooding in rural areas increased significantly following the building in 1974 – 75 of embankments to protect Dharbanga town. The severity of flooding increased again when the embankment heights were increased in 1987. The Dharbanga experience is typical of northern Bihar. Accordingly, the area of the State that is prone to flooding has increased from 2.5 million hectares in 1952 to 6.9 million hectares in 1994[ii]. Ironically, when the floods arrive villagers evacuate to the flood protection embankments, often suffering loss of life, livestock and possessions (see Photograph B – 2).

Photograph B – 2: Rural Populations Evacuate their Homes to take Refuge on Embankments

Source: Caroline Irby/Tearfund

[ii] Dinesh Kumar Mishra (http://www.himalmag.com/2007/august/bihar_flood_dinesh_mishra.htm)

Village 'kutcha' homes (bamboo and mud walls with thatched, or sometimes tin or tiled, roofs) are destroyed, and families are forced to live in bamboo and tarpaulin shelters on the embankments for the two to four months of flooding. Disease is common, and people are particularly prone to suffering skin complaints on the feet due to excessive exposure to water. There is no cooking fuel, and employment is scarce. Women are particularly vulnerable as they have no sanitation facilities on the embankment, and are often left with the children as the men travel to find work. According to the local Panchayati Raj Institution leader, Mr Safdar Imam[iii], "Six or seven of the weak and elderly die every year in each village as a result of the floods - often because they can't get out of the village in time. We lose about 60 of the 450 cattle in the villages I control. That's a substantial loss - hundreds of thousands of rupees."

Children are unable to attend school and, in fact, the State government often closes schools during the flood period, resulting in State-wide education losses. And while the government provides emergency assistance, supplies are limited and not always usable – for example, rice may be provided, but villagers have no cooking fuel. When people return to their villages, they often find that low-lying water pumps have become blocked by silt and debris requiring repair (see Photograph B – 3).

[iii] Controls thirteen local villages, including Kothiya Balwahi (fieldwork location) and its immediate neighbours. Quote from a Tearfund media team and David Loyn (BBC) interview in 2004.

Photograph B – 3: Low Lying Hand Pump

Source: Caroline Irby/Tearfund

B.4 Community Based Disaster Risk Management Facilitated by Discipleship Centre

Discipleship Centre (DC), a Delhi-based Indian NGO, has been implementing development programmes in Dharbanga district for over ten years (see Appendix Z). Recognising the need for vulnerability reduction in these areas, the NGO began a Disaster Mitigation and Preparedness (DMP) programme in October 2002 to reduce the impact of flooding and address the causes of vulnerability.

The approach taken in this work has been instrumental in the success of the project. DC's entry point for each new village has focused on establishing trust and encouraging local ownership. Once the community decides that it wants DC involvement, DC uses 'Participatory Rural Appraisal' (PRA) techniques to conduct CRA processes[iv] (see Photograph B – 4). Tools and techniques such as focus groups, hazard mapping and seasonal calendars are used to gather data on hazards, impacts upon the community and the vulnerabilities and capacities of the villagers. Through analysis, the next step is to help the community identify ways of reducing the risks to which they are exposed.

[iv] In recent years this has been based on the CRA methodology 'Participatory Assessment of Disaster Risk' (Venton and Hansford, 2006) developed and tested as a component of this research.

Photograph B – 4: The Author and Gabriel Das (DC)[v] with a Male Focus Group

Source: Courtenay Cabot Venton

B.5 Community Based Disaster Risk Management Impact

The DMP programme has had important impacts on the community. These are defined in five categories: natural, physical, human, social and economic.

Natural

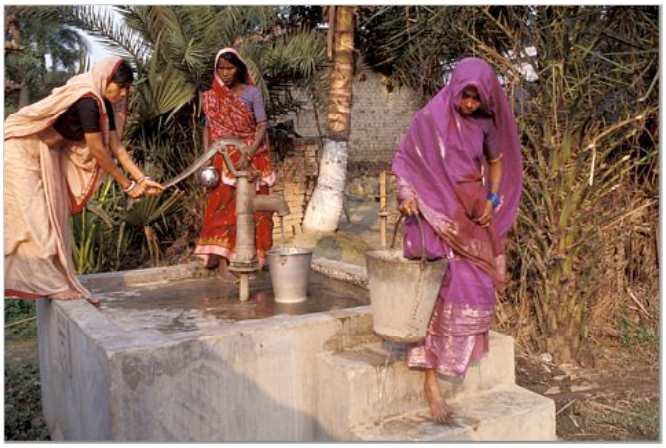
The area is fairly rich in natural resources – for example, groundwater, forests and fertile soil. The CBDRM programme has built on the existing resources by planting trees to increase soil stability and absorb floodwaters. However, during the flooding, nearly all crops are destroyed, either by submersion or excessive water logging of the soil. In response, farmers have changed their cropping patterns from year-round crops including maize, to crops that can be grown outside of the flooding season, such as wheat.

Physical

The floods frequently wash the few physical assets that villagers possess away. DC's programme has been able to reduce these losses. Perhaps the most significant has been the installation of raised hand pumps (see Photograph B – 5). These stay above flood levels, and therefore are still functioning after the flooding recedes, ensuring safe water supply for the communities.

[v] Left of author

Photograph B – 5: Raised Hand Pump



Source: Caroline Irby/Tearfund

The use of a raised escape path (see Photograph B – 6) and boats (see Photograph B – 7) has allowed speedy evacuation of villagers, especially the elderly and disabled, as well as livestock and possessions.

Photograph B – 6: Children Practice an Evacuation Drill Across a Raised Escape Path

Source: Caroline Irby/Tearfund

Photograph B – 7: Trained Community Members Practice an Evacuation using Boats

Source: Caroline Irby/Tearfund

While the programme has not been able to reduce the vulnerability of villagers to the loss of their homes, the establishment of the community 'Village Development Fund' (VDF) in the longer-term may help to build more permanent 'Pucca' structures. Raised platforms could also be a way of protecting 'kutcha' houses and the possessions stored within them.

Human

Community members report that the number of lives lost and the number of injuries due to the flooding has decreased since the introduction of CBDRM, particularly because of the availability of escape routes, boats, and the presence of trained teams of volunteers. Additionally, awareness of where the most vulnerable people live has helped to ensure that they are effectively evacuated (see Photograph B – 8).

Photograph B – 8: Elderly Woman's Mud and Thatched Home Marked with Red Flag

Source: Caroline Irby/Tearfund

The DC programme has also initiated attitudinal change – villagers overwhelmingly feel that they now have the confidence to effect change and feel empowered to work towards development goals.

Social

A number of social issues impact upon these communities, perhaps most importantly the caste system, which causes substantial discrimination and lack of opportunities for development. DC has made significant steps towards reducing social vulnerability. An important aspect of this has been the organisations work with the Panchayati Raj Institutions (elected council members for groups of villages) and with government-appointed Block Development Officers (BDOs) (see Photograph B – 9), to raise awareness of people's vulnerability to flooding.

Photograph B – 9: Block Development Officer, Mr. Naresh Jha, with Author

Source: Paul Venton

Noticeable improvements have also occurred in relationships between the landowners and the landless. Villagers note that the landowners have become more sympathetic and helpful, despite caste differences, since the DC intervention. Community members also cite that the creation of the 'Village Development Committee' (VDC) has greatly enhanced community relationships as well as increasing co-operation with neighbouring villages. There is a strong feeling that they have gained more confidence and have a greater sense of control over their development path. For example, Heera Paswan a resident of Kothiya Balwahi village (fieldwork location) states[vi], "We used to dread the rainy season. It was a time of fear and anguish, and we did not know whether we would survive each year. Now we are at peace. We know that we are more able to save ourselves in time."

The women's 'Self Help Group' (SHG)[vii] has had a similar effect. Not only do the women have their own group, but they also have committee members as a part of the VDC and have received training under the DC programme. There is a marked improvement in the status of women in the community, and their increased self-confidence is evident (see Photograph B – 10).

[vi] In an interview by the Tearfund media team with David Loyn (BBC) in 2004.
[vii] The Women's SHG save 25 rupees per month (normally used for medicine). They meet twice a month: once to collect and discuss savings, and the second time to discuss problems. Legally the SHG's have to be in operation for 6-8 months before the bank will accept them as legitimate and allow them to open a bank account.

Photograph B – 10: Women's Status in the Community is Improving

Source: Courtenay Cabot Venton

Improved social organisation has led to the drafting and agreement of flood contingency plans, so that all know where to go and what to take when the evacuation signal is given. Life on the embankments has been significantly improved, by advance clearance of scrub and allocation of plots for specific purposes.

Economic

Communities in this area are extremely vulnerable economically, due to lack of land ownership and reliance on the landowners, lack of savings and lack of employment opportunities. Villagers earn on average 30 Rupees (approximately 40 pence) a day for their work, and only have work for approximately 110 days of the year (see Box B – 1). Communities are dependent upon moneylenders, and often have to borrow at 10 per cent interest (monthly) to buy medicines, repair homes, and purchase expensive items. The key economic impact of the DC programme has been the establishment of the 'Village Development Fund' (VDF). This provides an important resource for the community, by providing a source of credit at 3 per cent interest (monthly), allowing the community greater access to goods and services.

B.6 Effectiveness of the Community Based Disaster Risk Management Programme Post the Flood of 2004

Following heavy monsoon rains the Kosi, Bagmati and Ganga rivers burst their banks in 54 places[viii] on 11 July 2004 inundating large areas of North Bihar, including Dharbanga District (see Photograph B – 11). As the rainfall occurred elsewhere in the watershed people had no specific warning of the pending flood, and water levels rose to danger levels in seven or eight ours (see Box B - 2).

Photograph B – 11: Thousands of Hectares of Land is Flooded

Source: Tearfund (2005a)

Box B – 2: Lack of Effective Early Warning System for Local Residents

Out of a total of 166 'Flood Forecasting Stations' nation wide, the 'Flood Forecasting Network' of the Central Water Commission operates 32 Stations in Bihar (Government of India, 2005a). This flood forecasting involves the following four main activities:

- Observation and collection of hydrological and hydro-meteorological data.
- Transmission of data to forecasting centres.
- Analysis of data and formulation of forecast.
- Dissemination of forecast.

This does not include all four components of an effective people-centred early warning system (risk knowledge, monitoring and warning, dissemination and communication, and response capability), and is therefore limited in its ability to support the most vulnerable.

[viii] Dinesh Kumar Mishra (http://www.himalmag.com/2007/august/bihar_flood_dinesh_mishra.htm)

The floods were considered by the local media to be amongst the worst in 50 years. People were left with no alternative but to evacuate their homes, with the majority taking refuge on the embankments and roadsides without proper shelter, clothes, food or drinking water. Over 21 million people were affected[ix], as 1.5 million hectares of agricultural land was flooded[x]. Around 674,000 houses were destroyed with many more being damaged[xi]. 585 people lost their lives[xii].

The 'Village Development Committees' (VDC), set up by DC in 15 villages, swung into action as flood response teams took up their designated roles. Pre-determined evacuation procedures were followed. The most vulnerable members of the villages were prioritised for transportation by boat to safety, and the remainder of the villagers[xiii] followed along with livestock. They took up shelter under temporary bamboo and plastic sheeting structures that had been assembled ahead of time. The VDC then coordinated the distribution of food items; with DC support. VDCs were able to help 3,450 households. The flood response teams even helped villages other than their own. Raised hand pumps were protected from floodwaters thus maximizing the availability of safe drinking water.

The difference between DC's villages and others in the District that had not benefited from CBDRM was clear. The latter were characterised by a lack of warning systems, a lack of resources for evacuation and general disorganisation. The community did not systematically assist the particularly vulnerable. Overall there was a delayed and ineffective response to the flood resulting in heavy losses of life, livestock and household belongings.

Despite improvements, the experience responding to the 2004 flood highlighted areas where further CBDRM work is required. For example:

[ix] UNDP SITREP 2 August 2004
[x] Ministry of Home Affairs, Government of India SITREP 3 August 2004
[xi] Disaster Management Department, Government of Bihar
[xii] Ministry of Home Affairs, Government of India SITREP 3 August 2004
[xiii] Sadly the former VDC Secretary, Mr. Sakhi Chand Paswan of Choti Balwahi village lost his life in the flood

- Women, and not just men, could be trained in the use of the boats.
- Food bank storage facilities.
- Improved and expanded health awareness training.
- Raised platform for community use.
- Give opportunities to involve other members of the community in VDC / volunteer activities.
- Engage local government officials in the programme[xiv].

Photograph B – 12: Usman (top) and Gabriel Das, Field Workers for Discipleship Centre (DC)

Source: Paul Venton

[xiv] To date there has been minimal input beyond an awareness of activities. A new initiative however intends to develop a block level committee: to include representatives from the 15 villages to meet with the three representative Mukhiyas from the relative Panchayats, the Block Development Officer (BDO), government school teachers and DC staff.

APPENDIX C

Climate Change

C.1 The Political Acceptance of Climate Change and its' Causes

Climate change science, although relatively recent, is not new. The World Meteorological Organisation (WMO) issued the first warning to governments regarding climate change in 1978[i]. But the political will to act has been weak on account of the fact that fossil fuel consumption (a key factor in the generation of the 'greenhouse gas' CO^2) has been linked closely with economic growth. Population growth and the struggle of developing countries to industrialise spur the rise in emissions. In 1988 the then UK Prime Minister, Lady Margaret Thatcher, in a speech on the global environment said, "It is possible that…we have unwittingly begun a massive experiment with the system of the planet itself"[ii]. But it is only very recently that governments and society are beginning to make serious inroads to curb emissions and reduce global warming. Some important milestones include: the 'Kyoto Protocol' to the 'United Nations Framework Convention on Climate Change' (in 1997), the 'Stern Review' on the economics of climate change (in 2006), the G8 Summit in Germany (in 2007)[iii], Al Gore and the 'Intergovernmental Panel on Climate Change' (IPCC) win Nobel Peace Prizes for their work (in 2007), and the 'Bali roadmap' agreed at the 'UN Climate Change Conference' (in December 2007).

C.2 Climate Change in India

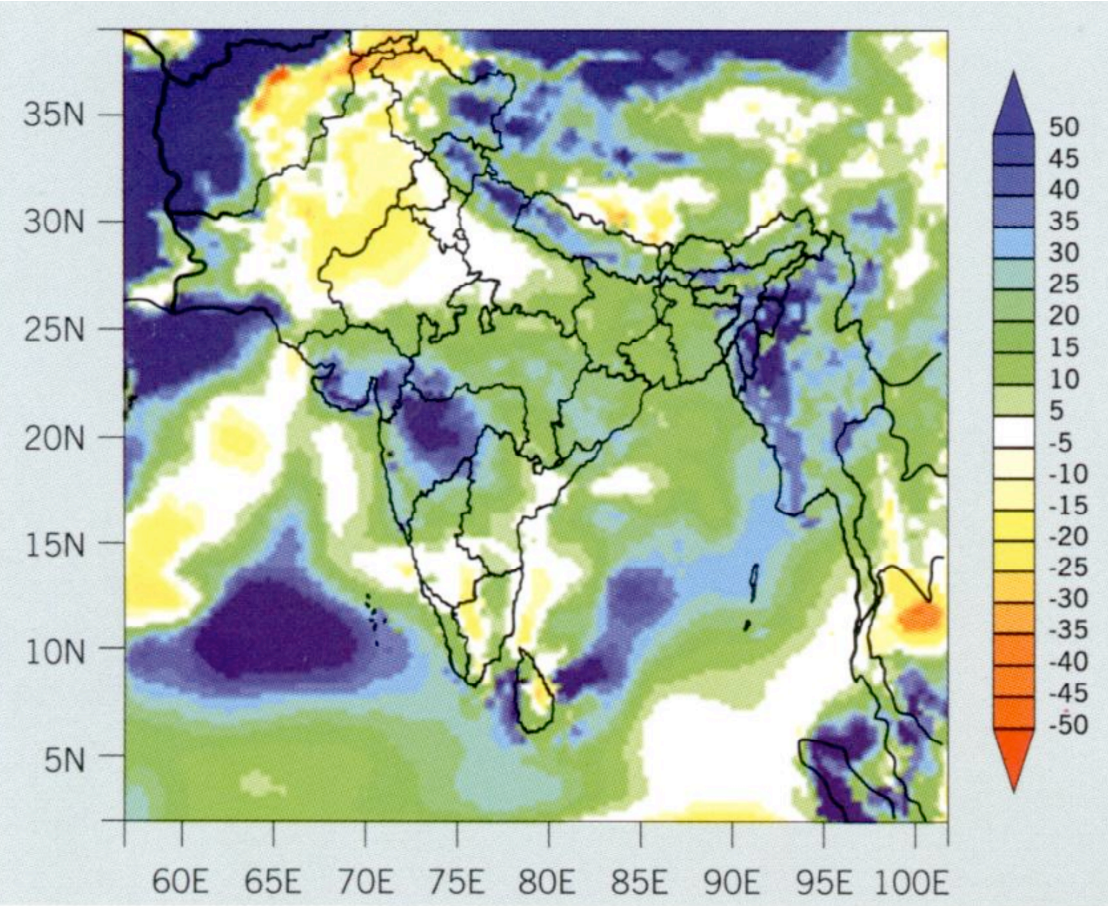
According to IITM (undated), "Climate change is predicted to impact India's natural resource base, including water resources, forestry and agriculture, through changes in precipitation, temperatures, monsoon timings, and extreme events. [Therefore] the Indian Institute of Tropical Meteorology (IITM) in collaboration with the Hadley Centre for Climate Prediction and Research, UK carried out an analysis of climate

[i] Obtained from personal attendance at a Side Event on Disaster Risk Reduction and Climate Change at the 'Global Platform for Disaster Risk Reduction', Geneva, 5 – 7 June 2007.
[ii] *The Independent* Newspaper Monday 17 October 1988
[iii] When the US almost commits to a 50% target for cutting greenhouse gases by 2050

change scenarios for India[iv].

The socio-economic forecasts that were used in the climate change predictions, as shown in Figures C – 1 and C – 2, are both based on regionally focused development with priority to economic issues[v].

Figure C – 1: Climate Change in India (Summer Monsoon Rainfall)



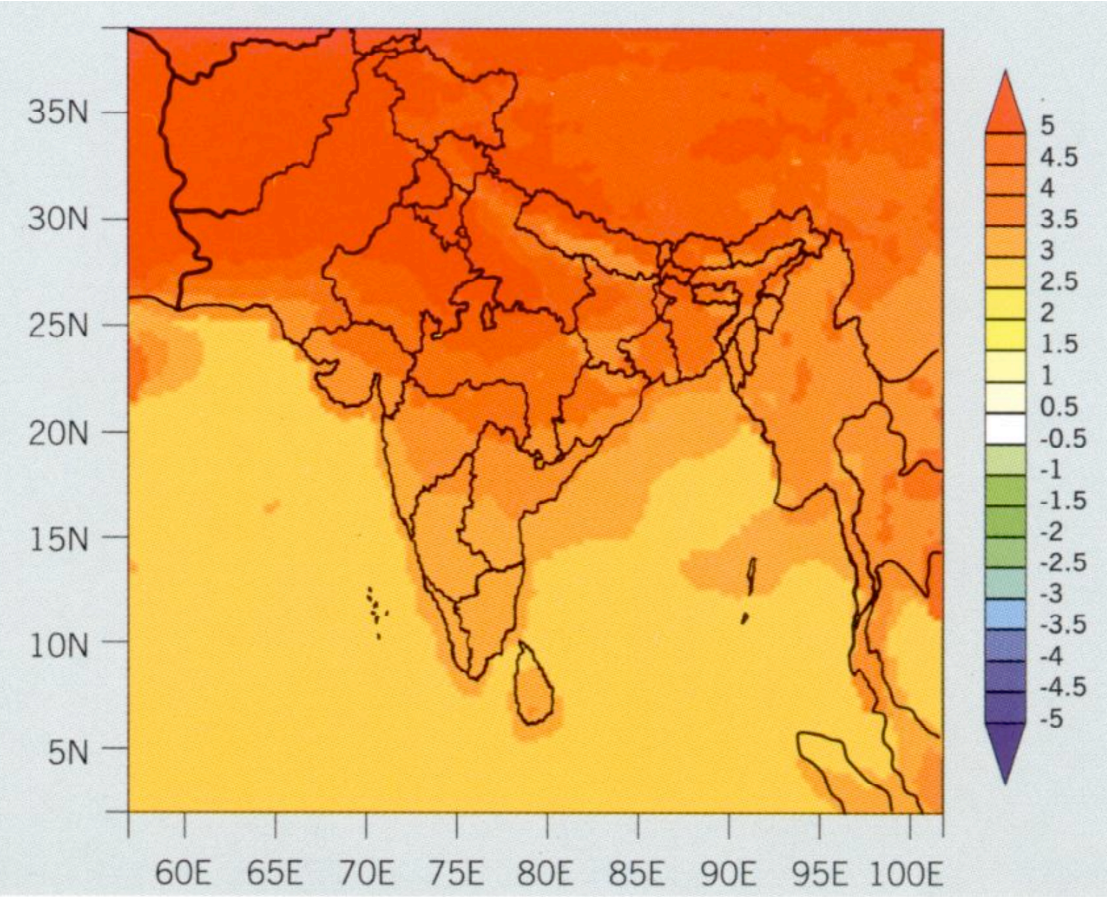
Spatial patterns of the changes in summer monsoon rainfall (%)for the period 2071-2100 with reference to the baseline of 1961-1990

Source: IITM (undated) *Climate Change Scenarios for India: Keysheet 2*. Delhi: The Indian Institute of Tropical Meteorology

[iv] IITM used the Hadley Centre Regional Climate Models for the Indian subcontinent to model the potential impacts of climate change

[v] Population and economic growth affect climate change, and therefore socio-economic forecasts were important to understand how different growth scenarios might impact on the degree of climate change. Other forecasts have been based upon environmental issues rather than economic.

Figure C – 2: Climate Change in India (Air Temperature)



Spatial patterns of the changes in annual mean surface air temperature (^{o}C) for the period 2071-2100 with reference to the baseline of 1961-1990

Source: IITM (undated) *Climate Change Scenarios for India: Keysheet 2*. Delhi: The Indian Institute of Tropical Meteorology

Research also predicts an increase in extreme rainfall and rainfall intensity in all of India's three main river basins (Ganga, Godavari and Krishna), affecting the primary fieldwork location, towards the end of the 21st century (DEFRA and MOEF, 2005) (see Box C – 1)

Box C – 1: Changes in Rainfall Predicted for India's Three Main River Basins

River Basin	Baseline (1961 – 1990)		Future (2071 – 2100)	
	Annual Rainfall (cm)	Annual Flow (km^3)	Annual Rainfall (cm)	Annual Flow (km^3)
Krishna	91	60	112	67
Godavari	166	98	201	116
Ganga	134	482	150	543

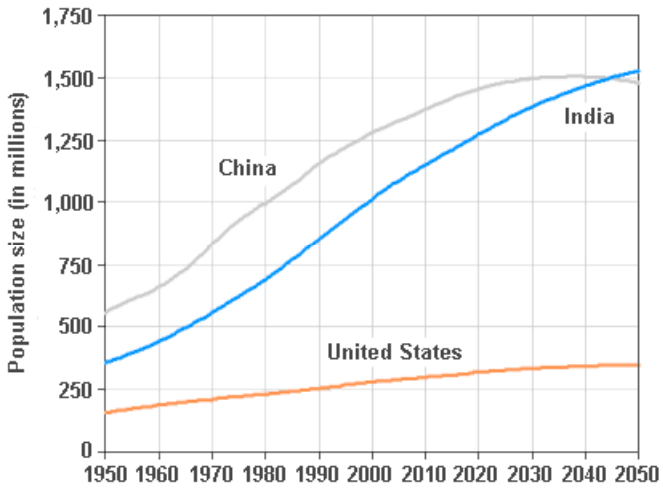
Source: DEFRA and MOEF (2005) *Investigating the Impacts of Climate Change in India* (Key Sheet 5: Climate Change Impacts on Water Resources in India). Delhi: Indian Ministry of Environment and Forests (MOEF)

APPENDIX D

Some Links between Population Growth, Natural Resource Depletion and Disaster Risk

India has a population of nearly 1.2 billion people (UN, 2007)[i] with a growth rate of 1.6% (CIA, 2007). By 2016, the population of India is expected to be larger than the population of all the more developed countries combined (that is, all the countries of Europe (including Russia), Australia, New Zealand, Japan, Canada and the United States)[ii]. In the view of the 'World Fact Book' (CIA, 2007), the huge and growing population is the country's fundamental social, economic, and environmental problem (see Figure D - 1). This is a familiar statement, and certainly the increase in population puts enormous pressure on the land and natural resources.

Figure D – 1: Estimated Comparison of Population Growth Between India, China and the USA



Source: United Nations (1999) *World Population Prospects: The 1998 Revision* New York: UN Population Division

[i] India's population (thousands): Total 1,169,016; Male 604,990; Female 564,026; Sex Ratio (males per 100 females) 107% (UN, 2007)
[ii] http://www.un.org/esa/population/pubsarchive/india/ind1bil.htm

In *Losing Ground*, Erik Eckholm (1976) links population growth in the Nepalese Himalaya[iii], currently estimated at 2.1% (CIA, 2007), to upland deforestation and soil erosion, which are presumed to cause downstream flooding and silting (Guthman, 1997). Indeed Bosch and Hewlett (1982) concluded from analyses of ninety-four experiments worldwide that deforestation tends to increase runoff and flood peaks. For India and Bangladesh, downstream of the vast catchment area of the Himalayan mountain range, this is concerning as forests are being depleted in Nepal by nearly one million acres per annum[iv] (Jones, 2000, p.117). However despite commonly held views in support of such analyses regarding the implications of deforestation on flood events, other evidence suggests a less clear-cut connection.

Since the 1980s, the above theory has come under intense criticism on empirical, theoretical and ideological grounds (Guthman, 1997). For example Piers Blaikie, in *At Risk* (Blaikie et al., 1984), summarises a significant amount of experience highlighting that the silt found in the Ganges and Brahmaputra rivers of India and Bangladesh is attributed to geomorphological processes in Nepal and Tibet occurring high above the tree line. In other words, not from soil washed down from the formerly vegetated slopes in the lower course of the Himalayan rivers. So, contrary to popular belief, despite the negative implications for the environment, and consequently people, irrefutable proof that deforestation in the upper reaches of a river is a direct root cause of flooding downstream is difficult to find.

[iii] Nepal's population (thousands): Total 28,196; Sex Ratio (males per 100 females) 98% (UN, 2007)
[iv] 400,000 hectares

APPENDIX E

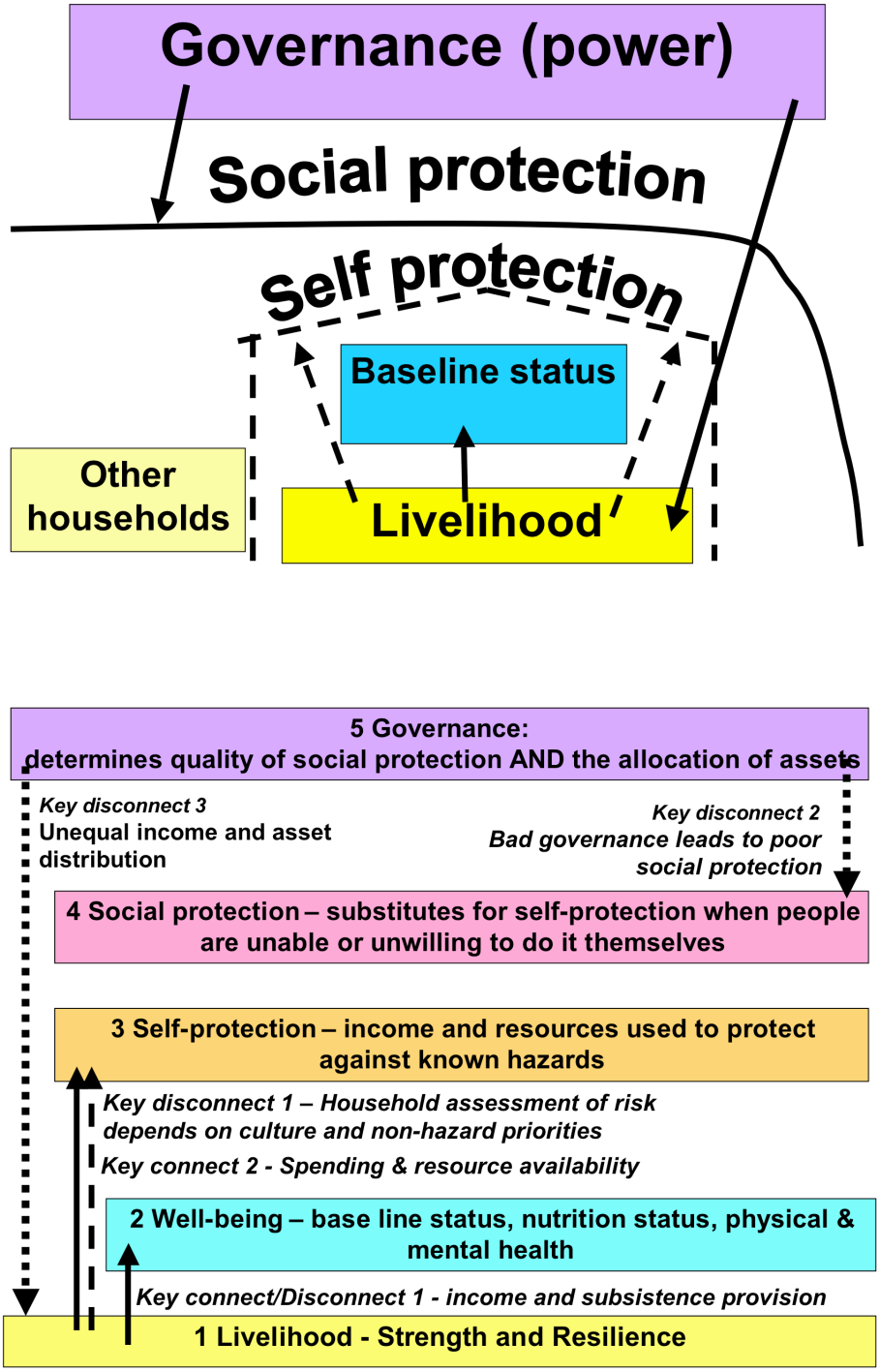
Cannon's Conceptual Model on Vulnerability

In step with the 'political economy approach' (Maskrey, 1989), Cannon states that the degree of vulnerability of an individual or household is determined by the relative weakness or strength of their livelihoods. The strength of livelihood affects the individual or household's 'base-line status' regarding, for example, health (physical and mental) and nutrition level. Combined, livelihoods and base-line status dictate the level of 'self protection' that can be achieved from shocks, such as natural hazards, (such as through the building of a safe house), and indeed the level of prioritisation that is given to such matters in the first place. This household level condition is heavily influenced by the degree of access to a range of assets (financial, physical, human, social and natural) that provide the basis for a livelihood strategy (described as 'capital' in DFID, 1999-2001). Moving beyond the individual household level concerning what can be achieved through 'self-protection', the model introduces an 'umbrella' of 'social protection'. If effective, this 'umbrella' will fill the gaps concerning what cannot be achieved through 'self-protection' alone (a notion adopted in ActionAid's 'Participatory Vulnerability Analysis' (PVA) and influencing the Zambia Red Cross Society's VCA (ZRCS, 2003) as examples). This is the function of a wider group of institutions, particularly government[i] who have a duty to protect their citizens (Etkin and Davis, 2007). All these aspects are determined by social, economic and political systems that reflect the power relations of any given society; in other words governance (World Bank, 1992), which is defined by the World Bank (2002) as "the manner in which power is exercised in the management of a country's economic and social resources for development"[ii].

The model is illustrated below.

[i] But also international agencies, NGOs and increasingly the private sector (ActionAid, undated)
[ii] Chapter 2.4.4 discusses the macro-level context of disaster risk reduction in reference to India.

Figure E – 1: Cannon's Conceptual Model on Vulnerability



Source: Presentation by Terry Cannon at BOND DRR Group on 9 February 2007[iii]: '(Dangerous) Climate Change and Community Based Adaptation'

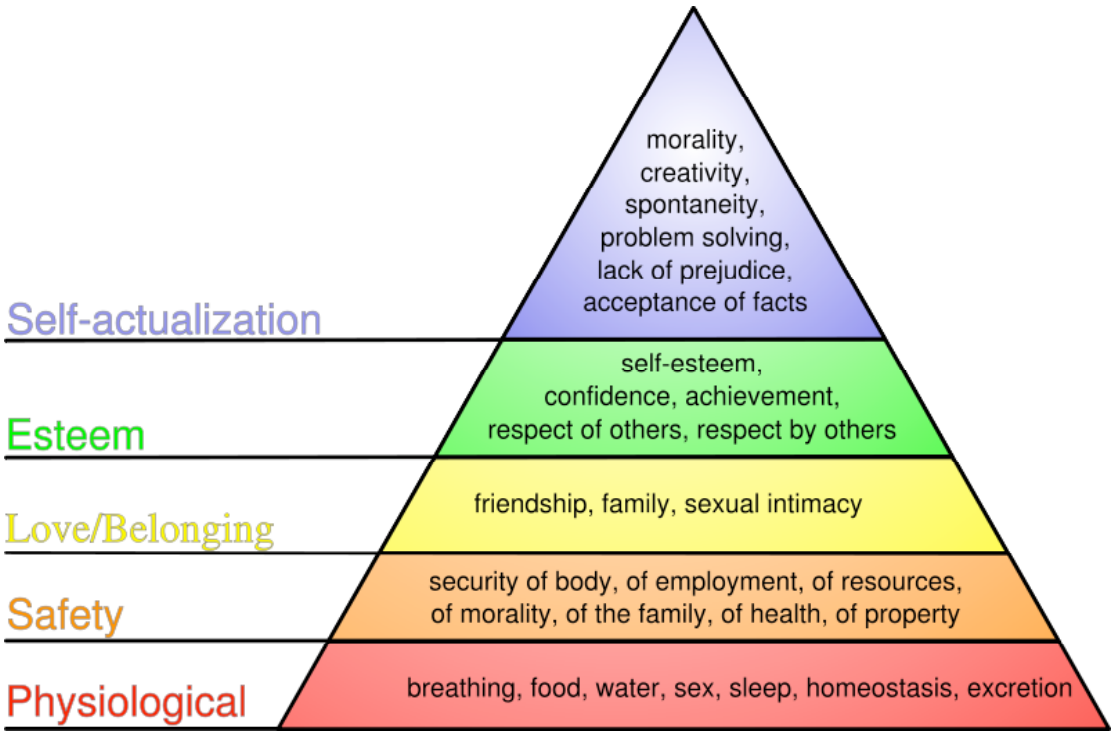
[iii] Attended by author

APPENDIX F

Maslow's Hierarchy of Needs

Figure F - 1 shows Maslow's 'Hierarchy of Needs', represented as a pyramid with the more primitive needs at the bottom.

Figure F – 1: Maslow's Hierarchy of Needs

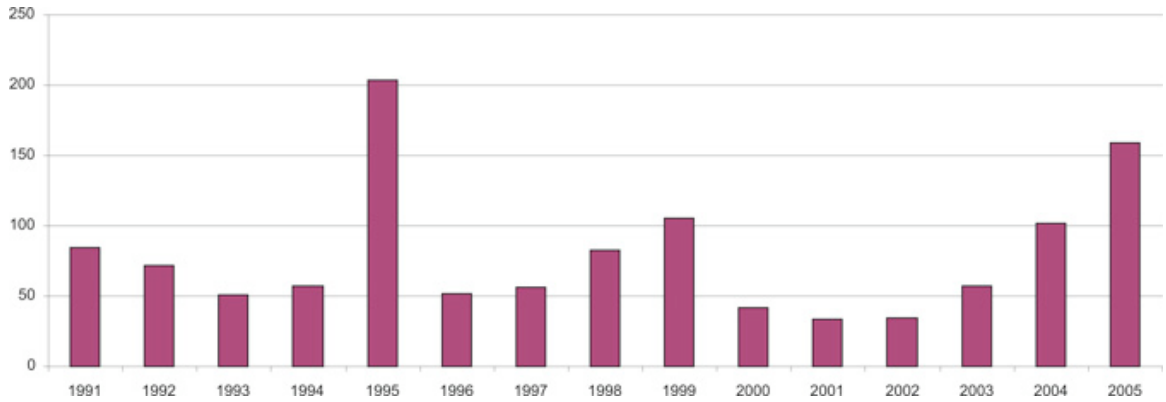


Source: 'A Theory of Human Motivation' (Maslow, 1943)

APPENDIX G

Economic Damage from Natural Disasters

Figure G – 1: Total Amount of Reported Economic Damages from all Natural Disasters 1991 – 2005 ($US billion)



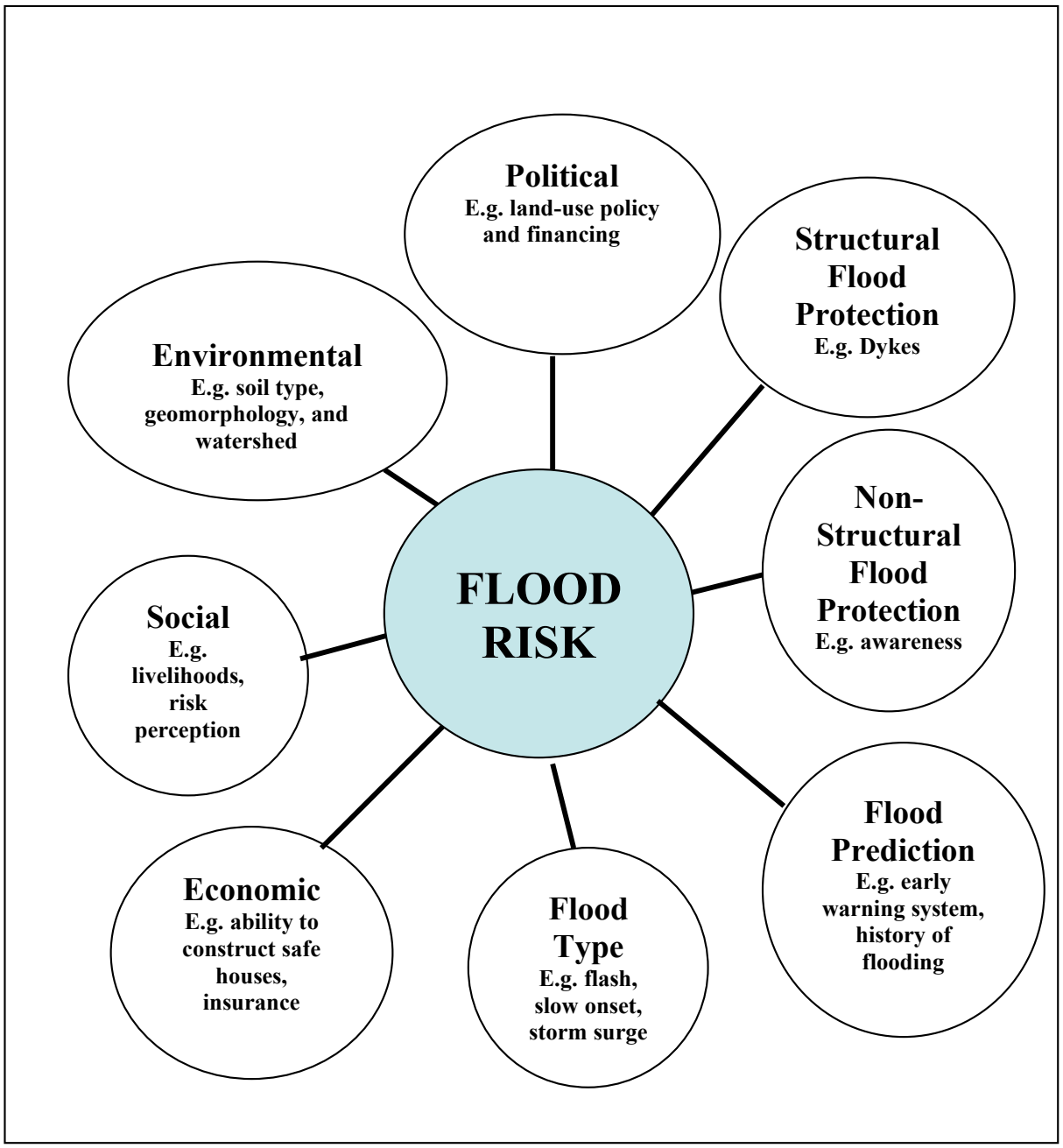
Source: EM-DAT: The OFDA/CRED International Disaster Database
http://www.em-dat.net, UCL - Brussels, Belgium

APPENDIX H

The Social, Economic and Environmental Context of Flood Risk

Demonstrating an inclusive ideology that stretches beyond a single discipline and perspective, the 'Institute of Civil Engineers' in the UK (ICE, 2001), point out that there are numerous factors affecting the risk of flood. Engineered, hard, structural 'flood protection' measures are just one aspect of this. Other issues cited include the broader social, economic and environmental context within which the flood occurs. Figure H – 1 illustrates ICE's appreciation of the components of flood risk.

Figure H – 1: Factors Affecting Flood Risk



Source: Adapted from ICE (2001)

APPENDIX I

The Pyramid of Principles

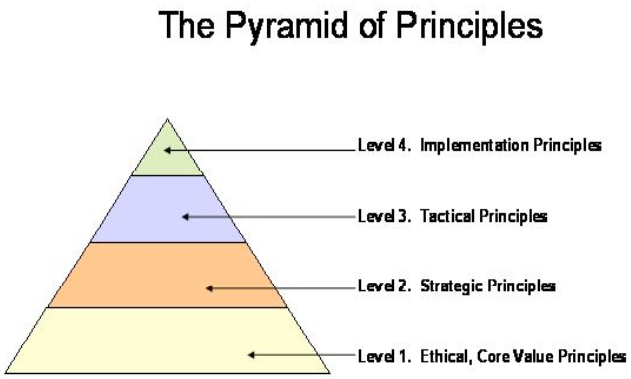
Level 1. *Ethical, Core Value Principles*, which relate to the underlying shared beliefs and concerns of organisations and of their mandate as it seeks to undertake disaster risk management. An example of an ethical principle would be the SPHERE principle - *"A right to a life with dignity"*.

Level 2. *Strategic Principles* concern the policy direction of disaster risk management and will be informed and based upon the ethical principles articulated in Level 1. Strategic principles consider what actions to take - why, where and with what expected consequences?

Level 3. *Tactical Principles* concern the practical outworking of the strategic principles. In other words, how to adopt the agreed strategy, considering staffing / financial implications etc.

Level 4. *Implementation Principles* are related to all the preceding levels: core values, strategies and tactics. They are the actions taken (as well as their monitoring and evaluation).

Figure I – 1: The Pyramid of Principles



Source: Etkin and Davis (2007)

APPENDIX J

Applying the Pyramid of Principles to Emerging Issues

To aid clarity in this exercise, the author is of the view that each of the four levels of the 'Pyramid of Principles' can be distilled to a fundamental question. Level one is about asking 'why' is disaster risk management needed. Level two considers 'what' should be done. Level three enquires 'how', and Level four implements this through 'action'.

Level One. *Ethical, Core Value Principles (why)*
- Rising numbers of vulnerable people

Level 2. *Strategic Principles (what)*
- Integration of top-down (technological / hazard focused) and bottom-up (community-based / vulnerability focused) programming
- Multi-hazard based programming
- Multi-discipline based programming
- Integration of climate change adaptation and mitigation
- Local capacities and resilience to be given greater emphasis (particularly in a post-disaster context)
- Livelihood protection based programming
- Integration of disaster risk reduction with development programming
- Local participation and community engagement
- Information sharing

Level 3. *Tactical Principles (how)*
- Risk assessment process that takes into account different perceptions of risk and different levels of acceptable risk

Level 4. *Implementation Principles (actions)*
- None

APPENDIX K

What is a 'Community'?

The words 'community' and 'community-based' are frequently used in disasters and development terminology. Even the 'Hyogo Framework for Action 2005-2015', arguably the most important DRR document on a global scale, is sub-headed 'Building the Resilience of Nations and *Communities* to Disaster.' But what precisely does community mean? Cited by IFRC (2004, p.30), sociologist Steve Brint pointed out, "An often repeated message of the community studies' literature is that communities are not very community-like. They are as rife with interest, power, and divisions as any market, corporation, or city government".

McMillan and Chavis (1986) and Dudley (1993) have raised the issue of the meaning of 'community', and Cannon (2003), SEEDS (2003), and Shaw and Okazaki (2003 and 2004) have specifically considered this within the context of disasters and 'community-based' work. Considering Shaw and Okazaki (2003), based on work by McMillan and Chavis (1986), they define community as, "a feeling that members have of belonging, a feeling that members matter to one another and to that group, and a shared faith that members' needs will be met through their commitment to be together." Within the context of CRA and CBDRM, community implies a cooperative spirit of 'mutual support' (Shaw and Okazaki, 2004, p.123). This mutual support is perhaps aided by exposure to common hazards and similar risks and indeed experience of actual disasters themselves.

APPENDIX L

The Citizens' Disaster Response Centre and Network of NGOs use of the Capacities and Vulnerabilities Analysis Methodology

The best documented and perhaps most significant adoption of the CVA method itself has been in the Philippines by the 'Citizens' Disaster Response Centre and Network of NGOs' (CDRC/N). This has occurred since the early 1990s, as part of the 'Citizenry-Based and Development-Oriented Disaster Response' (CBDO-DR) approach. This experience is perhaps a factor explaining why the Philippines is, according to Luna (2001, p.225) currently home to "a number of creative mitigation and preparedness activities…with increasing conviction in the need for participatory approaches and people-oriented development."

L.1 An Example of 'People-Oriented' Development in the Philippines

An example of well-publicised 'people-oriented development' in a hazard-prone environment of the Philippines is the work of the CBO Buklod Tao (meaning 'People Bonded Together') in San Mateo near Manila[i]. After successfully engaging in disaster preparedness and emergency response activities, such as organised evacuation, search and rescue, and evacuation centre management in their community since 1997, Buklod Tao has subsequently taken on the task of assisting other vulnerable communities build capacities in CBDRM (Victoria, undated, referencing Abinales, 2002, and Heijmans and Victoria, 2001). A strong component of this work revolves around the adoption of 'Hazard, Vulnerability and Capacity Assessment' (HVCA) as an aid in "reinforcing existing local knowledge"[ii].

[i] Visited by the author during fieldwork, 10 April 2005

[ii] Comment made by Mayfourth Luneta (Centre for Disaster Preparedness), in response to author's questioning regarding the links between assessment and action planning during fieldwork, 10 April 2005

APPENDIX M

Reversals in Rapid and Participatory Rural Appraisals

The approach to 'Rapid Rural Appraisal' (RRA) and 'Participatory Rural Appraisal' (PRA) of 'reversals' as advocated by Chambers (1994) is, through demonstration of usage in countless approaches to CRA (at least in theory if not in practice), accepted as good practice:

- Reversals of frame - a movement from the knowledge, categories and values of outsider professionals to those of insider local people.
- Reversals of modes - a movement from the individual to the group, from the verbal to the visual, and from measuring to comparing.
- Reversals of relations - from suspicion and reserve to confidence and rapport.
- Reversals of power - from extracting to empowering.
  (Brown et al., 2002, p.19)

APPENDIX N

Asian Disaster Preparedness Centre's Principles of Community Based Disaster Risk Management

Table N – 1: Summary of Asian Disaster Preparedness Centre's Principles of Community Based Disaster Risk Management

Summary of Principles **Critical Guidelines of Community Based Disaster Risk Management**	
Process 1: Undertake groundwork (with government) for sustainable CBDRM to occur, with local stakeholders as the driving force **Process 2:** Select communities for CBDRM through risk assessment **Process 3:** Build rapport and understand the community **Process 4:** Participatory disaster risk management planning **Process 5:** Community managed implementation of risk reduction measures **Process 6:** Participatory monitoring and evaluation	**Outcome 1:** Community Based Organisation (CBO) established or sustained to implement CBDRM **Outcome 2:** Community disaster risk reduction fund **Outcome 3:** Community hazard, vulnerability, capacity map (HVCM) (to form the basis of community learning) **Outcome 4:** Community disaster risk management plan **Outcome 5:** CBO training system **Outcome 6:** Community drills system **Outcome 7:** Community learning system **Outcome 8:** Community early warning system

Source: ADPC (2006)

APPENDIX O

Summary of Compendium of Case Studies

O.1 How has Community Risk Assessment Influenced Change in Policy and Practice at the Local and National Levels?

Below is an analysis by the author of the compendium of case studies pertaining to CRA as listed in the ProVention Consortium (2008) 'CRA Tool Kit'. Within the Tool Kit, guidance notes on the case studies responded to the question "How has Community Risk Assessment Influenced Change in Policy and Practice at the Local and National Levels?" It is these findings that have been analysed in Table O – 1 below.

Table O – 1: Influence of Community Risk Assessment on Local and National Levels

Influenced change

0 – no apparent influence

1 – possibility of influence

2 – evidence of influence

Case Study	Notes	Local Level Policy and Practice Influence	National Level Policy and Practice Influence
Community Risk Assessments, Disaster Preparedness and Mitigation Plan (DPMP) by Catholic Relief Services in Madagascar in 2004	Village selection process involved local government officials	0 The guidance notes say that the villagers are considered "more responsive to local government initiatives", but there is no suggestion that local government is more responsive to the villager's perspective of risk	0 No evidence
Vulnerability and Capacity Assessment (VCA) Report For 19 Communities in Kono and Tonkolili Districts by Sierra Leone Red Cross in 2004	The National Commission for Social Action (the government organ that is responsible for the coordination	1 The guidance notes say that policy and practice was influenced through awareness raising, identification of the problems, assessment of	1 According to the case study, the Government of Sierra Leone uses this VCA project as a good example. However how this has led to influence

Case Study	Notes	Local Level Policy and Practice Influence	National Level Policy and Practice Influence
	of the activities of NGOs) was in attendance at the VCA workshop	local resources available in the communities, and awareness of local attitudes and cultural practices. However there is no evidence of this in the case study alone.	over policy and practice is unknown.
Fire Hazard and Vulnerability in Imizamo Yethu Informal Settlement by University of Cape Town in South Africa in 2004	Secondary data collection provided an opportunity to engage with 'outsiders'	1 Local government officials were encouraged to participate in the research process, by acting as informants and facilitating initial meetings with other relevant stakeholders. It is possible then that through their involvement in the research process local level capacity development may have occurred, although it would be difficult to assess.	0 No evidence
Vulnerability Capacity Assessment: Sinazongwe District by Zambia Red Cross in 2003	The CRA team was composed of staff from the regional Red Cross delegation as well as district and local government. Use of an integrated team sets this study apart from many others executed by various national Red Cross and Red Crescent societies.	2 The district and local government was so integrally involved in the project with such "ownership" that it amounted to a district planning exercise, not simply one for the purposes of Zambia Red Cross Society programming.	0 No evidence
Beating Hunger: The Chivi Experience by Intermediate Technology in Zimbabwe in 1991 - 1993		1 Local (district) level extension agents fit into the on going project and began to use participatory methods themselves. Through	1 Participatory methods were begun to be used in the training of extension agents

Case Study	Notes	Local Level Policy and Practice Influence	National Level Policy and Practice Influence
		exposure visits, training and review processes, community groups have increased their knowledge of, and contact with, service providers such as the government agricultural extension service…The project has aimed to foster direct links between [these] groups and to avoid mediating the relationships in order that this communication can be continued in a sustainable way.	
Hazard Mapping and Vulnerability Assessment for Flood Mitigation by Bangladesh Urban Disaster Mitigation Project in 2000 - 2005	The possible "solutions" identified have a very heavy emphasis on structural mitigation, i.e. raising levels to avoid flood	2 The Municipal Disaster Management Committee (MDMC) received new data and developed a new contingency plan. The MDMCs now conduct regular committee meetings to discuss the connected issues to reduce the impact of floods. The MDMCs approved the mitigation and contingency plans prepared by the communities and assist in the implementation of the mitigation solutions.	0 No evidence
Community-Based Disaster Management Project in Champasack District by ADRC in Lao PDR in 2001 - 2004	The CRA process included training of local officials	2 Virtually all district level officials from many ministries were trained and involved. It is likely to have had a lasting effect.	2 As the national government was involved over a period of three years in a project that was very successful, it is likely that it has influenced national policy and practice.

Case Study	Notes	Local Level Policy and Practice Influence	National Level Policy and Practice Influence
Becoming a Model: Community Managed Flood Preparedness Project by Doaba Foundation in Pakistan in 2001 - 2002	A link was made between flooding and upstream hydro engineering. However actions appear to be confined to the local context and involve the construction of bridges and community centres.	2 Kamra village has become a model for 'scaling up'[i] by the local government and other NGOs. Local government officials from nearby flood-prone areas have made 'exposure visits'. Two out of the seven Union Councillors who visited Kamra are setting up disaster management committees in their own areas. Kamra's village organisation has developed a good rapport with the local authority which enables the village to have a voice in other developmental activity.	2 The experience served as the inspiration for a draft national policy for populations vulnerable to flooding
Enhancing Local Government Unit Capacities in Disaster Preparedness, Prevention & Mitigation by CDP in Philippines in 2002 – 2003 (see below for more detail)		2 An explicit intention of the project was to develop methods for bridging and coordinating governmental actions at province, municipality, and barangay level with community level assessment and action (collective and individual). Consequently, policy and practice has changed towards a more proactive and participatory approach in the province, municipalities and pilot barangays (to varying extents)	1 The politics of the allocation of national budgetary resources is cited as a barrier, implying that limited influence has been achieved

[i] An 'additive strategy' to scaling up (Twigg, 2004)

Case Study	Notes	Local Level Policy and Practice Influence	National Level Policy and Practice Influence
Umraniye Women's Outreach Community Disaster Preparedness Project by Petal et al. in Turkey in 2002		0 Limited evidence	1 The Ministry of Education nationally has come to appreciate the effectiveness of community-based disaster risk mitigation, and the value of education in promoting these practices at the household level
Belize Red Cross Vulnerability and Capacity Assessment Workshop by Belize Red Cross in 2005	Causal analysis of risk considered as a function of vulnerability, capacity, and hazard	0 Limited evidence	0 At the opening ceremony representatives from the Prime Minister's office were present as well as key government officials
Program for Prevention and Mitigation of Flood Disasters in the Lower Lempa Flood Basin by Government of El Salvador in 1999 – 2004 (see below for more detail)		2 The project has strongly influenced local government and NGO action at the local level	2 The Ministry of Environment and Natural Resources (MARN) considers this project a success and is likely to use this kind of integrated approach elsewhere in El Salvador.
Communities Vulnerable to Disasters in the Metropolitan Area of Guatemala City by Gellert in Guatemala in 1993 - 1995	Heavy emphasis was laid on self-help and organized lobbying for government and non-governmental assistance.	0 No evidence	0 No evidence
Capacity Building Workshop in Disaster Prevention and Risk Management for Communities of Caylloma District affected by the 2004 Cold Wave by Alvarex et al. in Peru in 2004		0 No evidence	0 No evidence

Case Study	Notes	Local Level Policy and Practice Influence	National Level Policy and Practice Influence
Pilot Study of Community Based Disaster Management Strategy for Earthquakes by Colina et al. in Venezuela in 2004	Meetings were held to calibrate community vs. local government perceptions and expectations	0 No evidence	0 Guidance notes suggest that national level policy makers will have noticed the use of participatory methods
Weathering the Storm: Lessons in Risk Reduction from Cuba by Oxfam in 2003	Focus group discussions with neighborhood groups, municipal and provincial authorities were the core of the CRA process, supplemented with institutional analysis based on interviews with officials and background data.	2 This system has components that bridge national, provincial, local, and neighborhood levels. Each year planning is conducted before the hurricane season and the results are analyzed after the hurricane season, with adjustments made according to experience.	2 The system described in this case study is a fully national system
Community Led Risk Assessment and Action Planning in White Horses by Jamaican Red Cross in 2004		0 No evidence	0 Although the guidance notes state that it reinforced the commitment of the Jamaican Red Cross and the national government (ODPEM) to the use of CRA as an approach to community level action planning, there is no actual evidence of this
Solomon Islands: From Risk Assessment to Community Actions by IFRC in 2003 - 2004		0 According to the guidance notes, local government saw the effectiveness of CRA in mobilizing participation in concrete projects such as drainage and water supply improvement. But it is not apparent whether this led to any influence over policy and practice.	0 The National Disaster Management Office participated in this CRA exercise. It is unclear if this experience had any influence on policy and practice at national level.

Case Study	Notes	Local Level Policy and Practice Influence	National Level Policy and Practice Influence
Participatory Methods of Incorporating Scientific with Traditional Knowledge for Volcanic Hazard Management on Ambae Island by Shane et al. in Vanuatu in 2001		0 No evidence	0 No evidence

APPENDIX P

Enhancing Local Government Unit Capacities in Disaster Preparedness, Prevention and Mitigation in the Philippines

This work by the Centre for Disaster Preparedness (CDP) in the Philippines in 2002 – 2003 recognises that "one of the key strategies for an integrated, responsive, proactive and development oriented management of disasters involves…meeting of the top-down with the bottom-up approach". Therefore an explicit intention of the project was to develop methods for bridging and coordinating governmental actions at Province, Municipality, and Barangay[i] level with community level assessment and action (collective and individual). But there is no standard mechanism for partnerships of this nature (Twigg, 2004, p.67). The CDP approach centred on capacity building of local government and the community, through training and public awareness. As a result of the project, policy and practice is believed to have changed towards a more proactive and participatory approach in the Province, Municipalities and pilot Barangays to varying extents. This is refreshing and positive.

Interestingly though the project is noted as serving as a springboard for CDP's continued partnership in disaster preparedness with the local government units and people of the target area[ii] in the implementation of the 'Basic Study on *Non-Structural* Disaster Prevention Measures'[iii]. This begs one to consider the government's motivation for engaging in the initiative. On account of a publicly acknowledged lack of funds for structural measures, is the Philippine government taking advantage of an opportunity to become aligned with a non-structural mitigation programme that is much less costly?[iv] If so, is this truly a meeting of top-down and bottom-up, or is it

[i] Most localised administrative level
[ii] Camiguin Province
[iii] Funded by Japan International Cooperation Agency (JICA) and supervised by the Earth System Science Company
[iv] The main political gain associated with the Philippine National Red Cross' 'Integrated Community Disaster Planning Programme' (PNRC, 2002, p.13) was thought to be the good public relations in contributing to projects that were popular in the local community. And still within a Philippine context, Allen (2004, p.110) and Allen (2006, p.97) highlight the danger of politicians using CBDP to deflect attention away from their own responsibilities regarding vulnerability reduction. Despite this Twigg

government dodging politicised prioritisation issues and instead encouraging community action so as to relinquish itself from some duties?

Source: Adapted from CDP (2005) and guidance notes in Provention Consortium (2008)

(2004) highlights the positive work undertaken by the NGO the 'Citizen's Network for Disaster Response' in helping Local Government Units (LGUs) institutionalise mitigation in their development strategies.

APPENDIX Q

Program for Prevention and Mitigation of Flood Disasters in the Lower Lempa Flood Basin of El Salvador

This case study, based on work by the Government of El Salvador between 1999 and 2004, is self-explanatory on issues relating to this thesis. It states:

"With the preliminary diagnosis in hand, a justification was presented to the Environmental Ministry and the Inter-American Development Bank (IADB) authorities as to the need for an extensive highly participatory, full-scale diagnosis, utilizing specialised consultants, workshop training sessions on local level risk management, group consultation sessions and in-depth interview and observation techniques. Originally, little support had been forthcoming from [the] government for an extensive diagnostic phase given the dominant notion that diagnoses abounded on the area, that these normally got shelved away on completion and that what was important was to get on with the job and design the intervention strategy. Moreover, certain government sectors, outside of the Environment Ministry and the IADB, were not overly enchanted with the postulates as regards full popular participation in the process. This could be explained by the conflictive nature of the zone and conservative, right wing notions held by some influential government sectors. The team [of consultants led by Allan Lavell] never completely understood the route by which [the] government finally came to fully support the project concept and methodology. Hypotheses as regards this could include the notion that the consultant team was seen to be facilitating a process by which government gained more legitimate access to a zone that was previously 'out of bounds', but, at the same time, of significant political currency."

"As a result of the project and the wide-ranging opportunity for discussion and negotiation it offered, the levels of confidence between the project team, local leaders and government personnel, and between local organisations themselves, allowed the formation of an embryonic Local Development Committee. The formation of this

committee was of great importance due to the confidence it generated in terms of the real possibility of future local participation in the implementation of new projects financed by the IADB or others. Decentralisation with local participation was considered a keystone to future success with risk reduction and sustainable development."

Source: Lavell (2003) and Lavell (2004)

APPENDIX R

The Government of India Disaster Management Act 2005

The Disaster Management Act, 2005 (Government of India, 2005b) provides for the following:

Establishment of the National Disaster Management Authority (NDMA)
With details on areas such as: Meetings; Appointment of officers and other employees; Powers and functions; Constitution of advisory committee; Constitution of National Executive Committee (with powers and functions); Constitution of sub-committees; National Plan (disaster management plan for the whole of India); Guidelines for minimum standards in relief; Relief in loan repayments

Establishment of State Disaster Management Authority
With details covering areas similar to those for the NDMA

Constitution of District Disaster Management Authority
With details covering areas similar to those for the NDMA

Measures by the Government for Disaster Management
With details covering areas such as: Central and State Government measures; Responsibilities of Central and State Government Ministries or Departments; Central and State Government disaster management plans of Ministries or Departments

Local Authorities

National Institute of Disaster Management

National Disaster Response Force

Finance, Accounts and Audit
With details on: Response funds; Mitigation funds; State funds; Ministries and Departments funds; Emergency procurement

Offences and Penalties

Miscellaneous
With details on: Amendment of rules; Powers of requisition; Payment of compensation; Media; Delegation of powers; Reporting

APPENDIX S

Government of India Institutional and Policy Framework for Disasters

S.1 Original Institutional Policy and Framework (pre The Disaster Management Act, 2005)

Ministry of Home Affairs: At the national level, the Ministry of Home Affairs is the nodal Ministry for all matters concerning disaster management[i].

National Crisis Management Committee (NCMC): The NCMC gives direction to the Crisis Management Group as deemed necessary and can give directions to any Ministry / Department / Organisation.

Crisis Management Group: The CMG's functions are to review contingency plans, coordinate the activities of the Central Ministries and the State Governments in relation to disaster preparedness and relief.

Control Room (Emergency Operation Room): An Emergency Operations Center (Control Room) exists in the Ministry of Home Affairs.

National Contingency Action Plan: A National Contingency Action Plan (CAP) for dealing with natural disasters.

State Relief Manuals: Each State Government has relief manuals / codes.

Funding Mechanisms: A Calamity Relief Fund (CRF) has been set up in each State. The Government of India contributes 75% of the CRF and 25% is contributed by the State. Where the calamity is of such a proportion that the funds available in the CRF will not be sufficient for provision of relief, the State seeks assistance from the National Calamity Contingency Fund (NCCF).

State Government Responsibility: The basic responsibility for undertaking rescue, relief and rehabilitation measures in the event of a disaster is that of the State Government. At the State level, Departments of Relief and Rehabilitation handle response, relief and rehabilitation.

[i] The transfer from the Ministry of Agriculture occurred in June 2002 (other than for drought and epidemics) post the Gujarat earthquake

District Level: The District level is the key level for disaster management and relief activities. The Collector / Deputy Commissioner is the chief administrator in the district.

S.2 New Institutional Mechanisms (post The Disaster Management Act, 2005)

The earlier mechanisms were based on post-disaster relief and rehabilitation. The changed policy / approach, however, mandates a priority to full disaster aspects of mitigation, prevention and preparedness and new institutional and policy mechanisms are being put in place to address the policy change.

The National Disaster Management Authority (NDMA): The NDMA is an integral part of the Government, with the Prime Minister as the Chairperson. It works with the full authority of the Government while at the same time it retains flexibility. The NDMA reviews the status of warning systems, mitigation measures and disaster preparedness. When a disaster strikes, the Authority coordinates disaster management activities. The Authority is responsible for:

- Coordinating / mandating Government's policies for disaster reduction / mitigation.
- Ensuring adequate preparedness at all levels.
- Coordinating response to a disaster when it strikes.
- Coordination of post disaster relief and rehabilitation.

State Level Disaster Management Departments: The Government of India is working with the State Governments to convert the Departments of Relief and Rehabilitation into Departments of Disaster Management with an enhanced area of responsibility to include mitigation and preparedness[ii].

State Level Disaster Management Authorities: The States have also been asked to set up Disaster Management Authorities.

District Level: At the District level, the District Magistrate (Collector) is the focal point for coordinating all activities relating to prevention, mitigation and preparedness as well as existing responsibilities pertaining to response and relief. Because of its enhanced mandate, the District heads and departments engaged in development will now be added to the District Coordination and Relief Committee so that mitigation

[ii] In Bihar this occurred on 18 March 2004

and prevention is mainstreamed into the District plan. The existing system of drawing up preparedness and response plans will continue.

Block Level: Similarly Block / Taluq Disaster Management Committees are being created in 169 multi-hazard prone Districts in 17 States. At the village level Disaster Management Committees and Disaster Management Teams are created. Each village will have a Disaster Management Plan. The Disaster Management Committee, which draws up the plans, consists of elected representatives at the village level, local authorities, and Government functionaries. The plan encompasses prevention, mitigation and preparedness measures.

State Level Disaster Management Acts: The States have been advised to enact Disaster Management Acts. Two States (Bihar and Gujarat) have already enacted such a law. The State Governments have also been advised to convert their Relief Codes into Disaster Management Codes.

National Policy on Disaster Management: The Government of India has enunciated a National Policy on Disaster Management. The policy notes that State Governments are primarily responsible for disaster management including prevention and mitigation. The broad features of the national policy on disaster management are:

- A holistic and pro-active approach for prevention, mitigation and preparedness.
- Each Ministry / Department of the Central / State Government will set apart an appropriate quantum of funds under the Plan for specific schemes / projects addressing vulnerability reduction and preparedness.
- Projects addressing mitigation will be given priority. Mitigation measures shall be built into the on-going schemes / programmes.
- Each project in a hazard prone area will have mitigation as an essential term of reference. The project report will include a statement as to how the project addresses vulnerability reduction.
- Community involvement and awareness generation, particularly that of the vulnerable segments of population and women has been emphasized as necessary for sustainable disaster risk reduction.
- There will be close interaction with the corporate sector, non-governmental organisations and the media in the national efforts for disaster prevention / vulnerability reduction.

- Institutional structures / appropriate chain of command will be built up and appropriate training imparted to disaster managers at various levels to ensure coordinated and quick response at all levels; and development of inter-State arrangements for sharing of resources during emergencies.
- A culture of planning and preparedness is to be inculcated at all levels for capacity building measures.
- Standard operating procedures and disaster management plans at State and District levels as well as by relevant central government departments for handling specific disasters will be laid down.
- Construction designs must correspond to the requirements as laid down in relevant Indian Standards.
- All lifeline buildings in seismic zones III, IV & V – hospitals, railway stations, airports / airport control towers, fire station buildings, bus stands, major administrative centres will need to be evaluated and, if necessary, retro-fitted.
- The existing relief codes in the States will be revised to develop them into disaster management codes / manuals for institutionalizing the planning process with particular attention to mitigation and preparedness.

Source: Selected aspects of text from the Government of India's report to the WCDR in Kobe, Japan, January 2005 (Government of India, 2005a), with some editing by the author for improved ease of readership and additions based on the Act (Government of India, 2005b)

APPENDIX T

Tearfund as an Action Research Partner

Tearfund is a Christian UK based relief and development NGO. The researcher worked for Tearfund's Disaster Management Team March 2000 – April 2006[i], overlapping with the research period January 2002 – January 2008. A significant proportion of the researcher's time was spent training partner organisations on DRR, and working on DRR advocacy with donor institutions. The last role undertaken by the researcher at Tearfund was Disaster Risk Reduction Technical Advisor and Policy Officer for a £3.3m UK Department for International Development (DFID) DRR grant.

Tearfund was an excellent environment to carry out AR. The organisation was committed to the concept of DRR. For example, Tearfund's International Strategy and core themes emphasised the significance of DRR. It therefore invested significant resources in pursuit of implementing DRR measures directly through the Disaster Management Team or indirectly through increasing the capacity of partner organisations in this area. The organisation was also committed to pursue an active DRR advocacy campaign for improved policy and practice among donor institutions and country governments.

This approach soon highlighted the need to develop competencies (of Tearfund International Group and partners) in CRA and CBDRM. At the basis of this was a clear appreciation of the links between disasters, vulnerability (including its root causes) and development, and the fact that good 'risk aware' project design would lead to risk reducing measures implemented as part of 'normal' relief and development. This then was the background that led to the development and testing of a new CRA tool and the identification of good practice CBDRM.

Individual staff members are mentioned in the 'Acknowledgements' section.

[i] Subsequent to this and for the remainder of the research period, the researcher was an independent consultant

APPENDIX U

Cultural and Topical Interviewing

The topical interviewing undertaken for this research was influenced by cultural considerations. This appendix describes how this was achieved, by comparing a photographer with a painter.

A researcher engaged in cultural interviews may listen intently to interviewees so as to reflect upon values and rules of behaviour masked within the content of conversation. These are then pulled aside and captured, like a photograph. However, undertaking a topical interview required more direction than this. Questions were more forthcoming, deliberate and focused, and interaction was enhanced so as to ensure the conversation was guided. Therefore the researcher, to a degree, had to interpret what was discussed by considering how cultural norms influenced the interview. Rubin and Rubin (1995) suggest that such a researcher can be considered more of a painter than a photographer.

Stretching the analogy the topical interviewing undertaken sought to collate a gallery of paintings from the interviewees, but all based on the same broad subject of DRR. Because these paintings were influenced by different cultures and contexts and the interpretation of the researcher, on initial inspection they could appear a little different. Perhaps emphasising different issues. But through a process of careful examination and analysis, important common themes and styles became evident.

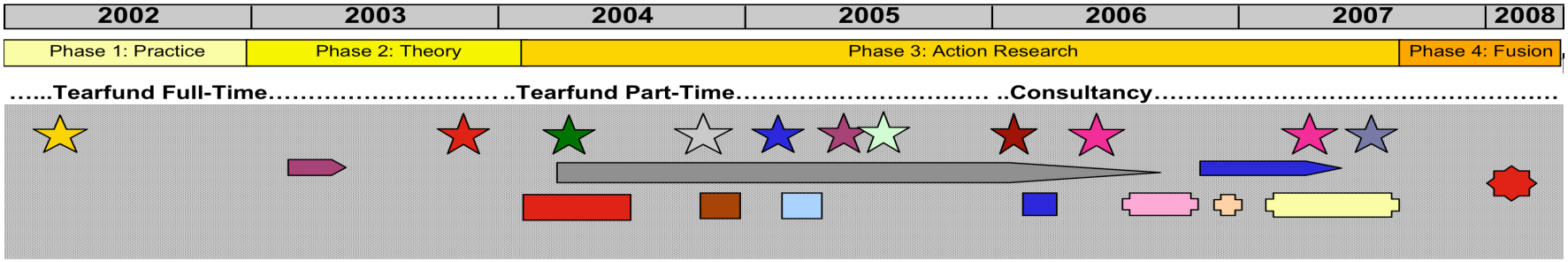
APPENDIX V

The Indirect Connections Between Different Forms of Vulnerability

Both the researcher's perspective on vulnerability (see Chapter 2.2.2) and the CRA methodology developed as a key component of this research, place significance upon the way in which social vulnerability interacts and is influenced by other forms of vulnerability, including economic, physical and environmental. This is most clearly expressed by the fact that the CRA tool developed through AR considers people's perspective on vulnerability (and capacity) (i.e. social vulnerability and capacity) in relation to five categories of analysis based on sustainable livelihoods capital - economic, physical, natural, human and social. As a consequence the location of dwellings and the quality of building design (physical vulnerability / capacity), or the fertility of agricultural soil and quality / quantity of water (environmental vulnerability / capacity) for example, features strongly as factors influencing social vulnerability. Indirectly therefore, this research does include perspectives on other forms of vulnerability besides social.

Furthermore 'political vulnerability', for instance in relation to what Heijmans refers to as 'development aggression' (Heijmans, 2004), is implicit within the expansion of social vulnerability into the conditions where people's vulnerability is generated, as investigated in this research. Fred Cuny neatly presents this concept with the words, "Reducing the vulnerability of the poor is a development question, and such a question must be answered politically" (Cuny, 1983, p.9).

APPENDIX W
The Progression of Research



LISTED IN CHRONOLOGICAL ORDER

- DMP Workshop, Assam, India
- Donor DRR Research
- Donor DRR Research, Westminster Conference
- Fieldwork, India
- Social VCA Workshop, Geneva
- Semi-Structured Interview Period
- Learning Review, Teddington, UK
- Fieldwork, Delhi Slum and Feedback Workshop, Delhi
- World Conference on Disaster Reduction, Kobe, Japan
- Fieldwork, Philippines
- International CRA Workshop, Cape Town, South Africa
- Training Workshop, Aceh Province, Indonesia
- Critical Guidleines of CBDRM Workshop, Thailand
- Fieldwork, Bihar and Training Workshop, Bihar, India
- Training Workshops, Rawalpindi and Peshawar, Pakistan
- Good Practice CBDRM Fieldwork and Expert Opinion
- Review of Donor Progress Mainstreaming DRR
- Good Practice CBDRM Workshop, Teddington, UK
- Good Practice CBDRM Government Meetings
- Global Platform for Disaster Risk Reduction, Geneva
- Submission of Thesis

APPENDIX X

Participatory Assessment of Disaster Risk

The sections below are *extracts from the CRA training guidebook* 'Reducing Risk of Disaster in our Communities' (Venton and Hansford, 2006[i]), which contains the CRA methodology 'Participatory Assessment of Disaster Risk'. The book is part of Tearfund's ROOTS[ii] series and therefore conforms to a particular style of writing appropriate for the primary users of these publications. Tearfund is a Christian relief and development agency, and thus a focus of interest of the organisation is in developing the capacity of the local church to serve local communities. This perspective influences aspects of the text.

X.1 Introduction to 'Reducing Risk of Disaster in our Communities'

The most effective way to reduce disaster risk is to work with local people to identify and analyse their vulnerabilities and capacities, and to develop and implement an action plan. This book looks at one method that can be used to achieve this. This methodology is called 'Participatory Assessment of Disaster Risk' (PADR).

The PADR process should involve the active participation of local people. It is an empowering process, as people begin to understand the reasons for their vulnerability, and identify their own capacities. These capacities then become the focus of action planning. The action plan looks at how capacities can be developed and used to overcome some of the vulnerabilities. Some activities can be carried out locally to reduce risk, while others may require external support or involve advocacy at district, national or international levels.

PADR can be used in a number of different situations:

- In areas experiencing regular disaster events.
- In planning all types of development projects in all areas – not just disaster-related projects in areas that are known to be at risk of disaster. Development projects should be planned with an awareness of the risks facing local people.

[i] Also available in French, Spanish and Portuguese, with elements translated into Hindi.
[ii] Resourcing Organisations with Opportunities for Transformation and Sharing

Otherwise, they could increase vulnerability to disaster. In addition, sustainability of development projects can be improved. If risks are not identified and a disaster occurs, the benefits could be lost.

- After a disaster, to help people to address long-term, underlying causes of their vulnerability, as well as meeting their immediate needs.

PADR has been used successfully by Tearfund partners in many countries, including Eritrea, Ethiopia, India, Malawi, Sierra Leone and Sudan.

X.2 Introduction to 'Participatory Assessment of Disaster Risk'

This section looks at how the 'Crunch and Release' models can be transformed into a practical tool called 'Participatory Assessment of Disaster Risk' (PADR). Components of the model (hazards, elements at risk, vulnerable conditions, pressures and underlying causes) form stages in the Assessment process.
The key steps are:

- Preparation.
- Hazard assessment.
- Vulnerability assessment.
- Capacity assessment.
- Key informant interviews.
- Action planning.

Using this approach, disaster risk can be fully assessed by local people and effectively reduced through a range of activities. In this section, we consider two important issues, which are essential to the PADR process:

- Good facilitation.
- Understanding the categories of analysis, which form the basis of the vulnerability and capacity assessments.

X.2.1 Good facilitation

PADR requires good facilitation if it is to be owned by local people. This involves:

- Identifying who should facilitate.

- Considering facilitation issues.
- Thinking about facilitation skills.

The purpose of the facilitation team is to enable local people to carry out the assessment. The team needs a minimum of three people:

- A facilitator who can lead the discussions.
- Someone who can make accurate notes of the discussions and plans.
- Someone who can make practical arrangements.

It is beneficial for some facilitators to be from the local area, as it will help the community to engage with the process better. It will also help to address expectations, which can be particularly high if too many outsiders are involved. Local people have a lot to contribute to the facilitation team – they will know which methods will work and which will not work.

Any local people who join the facilitation team should be willing to remain neutral during focus group discussions. Potential local facilitators may have already shown their ability to facilitate discussion. Other people may have the potential to become good facilitators, and could be trained during the PADR process. These people should be included in the facilitation team from the start. However, they may initially want to watch others facilitate the focus group exercises before doing it themselves. It is important that experienced facilitators give these new facilitators constructive feedback.

Relief dependency

Where a high level of relief aid has been distributed after a disaster, 'relief dependency' may develop. This occurs if relief aid is excessive or is provided without recognising people's own coping capacities. Humanitarian agencies can treat beneficiaries as helpless victims and allow them little participation in decision-making, rather than treating them as survivors with strengths and abilities.

When people have become used to getting help from outsiders, they may exaggerate

the scale of their vulnerabilities and minimise their capacities in order to get maximum support and resources. Information received from people that seems surprising could therefore be checked by asking other local people or organisations working in the area. Findings can be compared and verified. The facilitator will need to be wise in the handling of the assessment process. The facilitator should strengthen people's desire to develop without becoming reliant on outside help.

Managing sensitive issues

Exposing and exploring people's vulnerabilities is a sensitive matter. If there is not enough emphasis upon capacities, the PADR process can focus too heavily upon weaknesses. This can be dis-empowering and cause pain by bringing to mind past traumatic events. Discussions about the underlying causes of people's vulnerability can be very sensitive if they refer to specific people in positions of power and to traditional belief systems.

If not facilitated well, PADR can cause either one of the following reactions:

- A fatalistic attitude where poor and marginalised people start to believe their vulnerability has to be permanent. A Christian facilitator can share a different perspective – that poor and marginalised people are valuable to God, and all have abilities and potential. This creates hope for the future.
- Increased tension between those who are vulnerable and people who are identified as creating or ignoring their vulnerability. The facilitator could help the group to think of situations where these people are or have been helpful and to consider what influences the good or bad decisions they make.

Key principles

By following some key principles, local ownership of the PADR process can be encouraged:

- The purpose of PADR should be made clear to, and agreed with, local people.
- The process should be carried out with respect and sensitivity.
- The process of assessment is as important as the product or outcome. Invest time in encouraging the process to be as participatory as possible.

- Where possible, focus groups should be made up of people with similar characteristics, such as age, sex, livelihood or ethnicity.
- Energisers or ice-breakers at the start of focus group meetings can help people to feel comfortable with the facilitators and with other people.
- Questions should be open-ended in order to encourage discussion. However, make sure that discussions do not stray from their purpose.
- Analysis of the information collected should be done with local people.
- Literacy should not be assumed. 'Participatory Learning and Action' tools enable people who are not literate to participate in information gathering and analysis.
- Sensitive issues should be dealt with carefully and appropriately.
- The process may identify low-cost ways to reduce vulnerability. Communities can be empowered if they are encouraged to start with these after the action-planning step.

X.2.2 Categories of analysis

PADR uses five 'categories of analysis'. The five categories relate to different types of assets. An asset is something that can be used to improve well-being. These categories recognise that hazards affect different aspects of life. By using these categories we can ensure that all aspects of vulnerability and capacity are assessed. It means that the facilitator's preferences, or those of powerful people, do not dominate. For example, it may be tempting for a facilitator who is experienced in social work to ignore structural or physical strengths and weaknesses. Someone with an engineering background may not pay adequate attention to indigenous skills or local knowledge.

The facilitator may find it useful to start discussions with focus groups in the order given here. However, while this order is logical and discussions can flow quite naturally from one category to the next, the facilitator may need to be flexible and respond to the direction of the group's discussions. This is partly because the categories are connected with each other. The facilitator should be focused upon the overall aim of the process – to find ways of reducing disaster risk – rather than necessarily following the exact sequence of the process itself.

Economic assets

These relate to household income and expenditure and possessions that can be turned into money. For example, in some countries, jewellery is an economic asset, which can be traded or sold when the household needs cash. Cattle are also a saving mechanism in some countries. At a local level, savings and credit opportunities are economic assets. Discussion about economic assets often sets the context for the other categories, because people will naturally begin to discuss them.

Natural assets

These include forests, rivers, grazing areas and wild fruits. Discussion should be about whether these assets exist in the local area and who has access to them. Trends in quality and availability, such as deforestation or lowering of the water table, should be assessed.

Constructed assets

Constructed assets are man-made. These include basic infrastructure such as houses, roads, schools, hospitals, electricity cables and wells. They also include tools and equipment that people use to be productive such as a plough. Infrastructure is often directly managed by the government, while tools and equipment are usually privately owned and managed.

Individual assets

These include people's skills, knowledge, ability to work and physical health. The size of a household may affect these assets. For example, a household with many small children may have fewer adults able to work because of childcare responsibilities. People often draw upon their individual assets to make the best use of assets in other categories. For example, they may have traditional knowledge of agricultural methods or edible wild plants, which increases use of constructed or natural assets. Individuals will have their own spiritual beliefs, which may affect their own, or other people's vulnerability or capacity.

Social assets

These consist of relationships and networks that exist in the community and with people outside. They have an important influence on levels of vulnerability and capacity, but are often neglected. The extended family is an important asset in this category, followed closely by issues of leadership and ability to settle disputes. Membership of networks can expand an individual's ability to access information, such as a farmers' co-operative providing access to details about market prices. Good relationships can lead to co-operation and the sharing of resources.

Social assets can contribute to people's well-being by strengthening identity, pride and a sense of belonging. However, exclusion from groups can be a powerful pressure, which affects vulnerability. Individuals' spiritual beliefs can influence their relationships.

X.3 The Six Steps of Participatory Assessment of Disaster Risk

The aim of PADR is for stakeholders (local people, facilitation team and key informants) to:

- Understand the risks experienced by local people and the causes of their vulnerability.
- Understand local capacities.
- Identify activities that will be carried out to reduce the risk of disaster.

X.3.1 Preparation

A plan to carry out PADR should be developed in consultation with the community, particularly its leaders. Their understanding and ownership of the process is very important for its success and future outputs. It is also important to gain as much support from the government as possible. Therefore, it may be appropriate to invite government officials to be involved at this stage of the process, and at other appropriate stages throughout the process.

Identify focus groups

Vulnerabilities and capacities will vary between different groups within a given

community. Even within groups, individuals will experience different types of vulnerability and will possess different capacities. Perceptions of disaster risk will therefore vary. However, it is not practical to meet with every person in the local area. The best way forward is therefore to meet with a selection of people in focus groups. These focus groups consist of community members with similar characteristics.

When setting up focus groups, consider how different categories of people within the local area are likely to be affected by disaster. Community leaders can help by identifying specific people who could join focus groups.

Consider potential key informants

In order to gain a full understanding of vulnerabilities and capacities, it will be necessary to talk to individuals who have a different perspective, level of knowledge or understanding from the majority. They are likely to be external to the community or occupy positions of power and influence. The community leaders may have identified some of these informants. Other key informants might be identified later by focus groups during the vulnerability assessment. It is important to have spoken to key informants before planning action.

Key informants may include:

- Local government officials.
- Landowners.
- Employers.
- Other community leaders in the area.
- Religious leaders.
- School teachers.
- Medical staff (doctors or health workers).
- Government agricultural or livestock workers.
- NGOs in the area.
- United Nations personnel in the area.

Learn and practice participatory tools

The success of PADR in leading to reduced disaster risk is heavily dependent on the

commitment of local people to developing and initiating action. The proper use of participatory tools will help to achieve this, as there will be shared learning and development. Facilitators should take time to learn, adapt and practice participatory tools. Decide carefully which tool to use for different steps in the process.

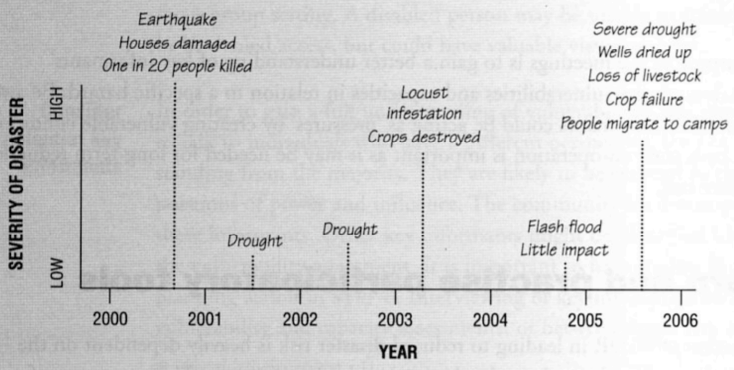
Some participatory tools that could be useful in PADR include: Timeline; Mapping; Ranking; Drama; Folk songs; Transect walk; Venn diagram; Direct observation; and Seasonal calendar (see Figure X – 1)

Figure X – 1: Participatory Tools Useful in Participatory Assessment of Disaster Risk

Some participatory tools that could be useful in PADR…

TIMELINE

This is used to gather information about what happened in the past in order to understand the present situation.



DRAMA

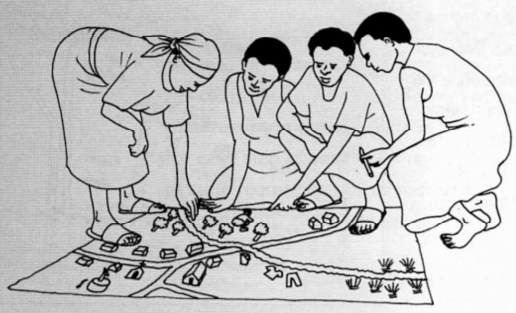
People could be asked to act out a disaster situation, showing who is affected and what is damaged. They could show how local people prepare for, and respond to, particular hazards.

FOLK SONGS, STORIES, POETRY

These can reveal indigenous knowledge, beliefs and practices.

MAPPING

This involves drawing the area's main features and landmarks as a map. This might include houses and community facilities vulnerable to particular hazards, and the location of key resources in an emergency. Maps can be drawn on the ground using sticks, leaves and stones, with chalk on a blackboard or with pens or pencils on a large sheet or a large piece of paper.



RANKING

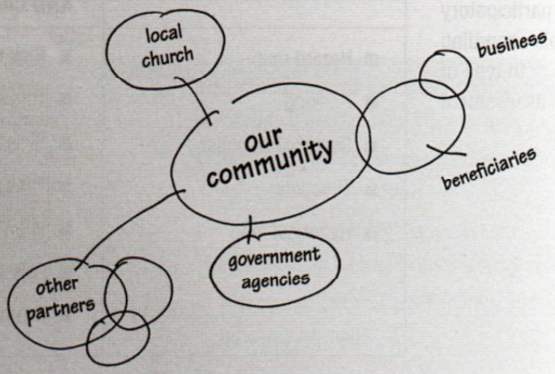
This tool explores people's perceptions of risks and helps to understand their priorities. One way of carrying this out is to write or draw the risks on to separate paper bags. Give each person six seeds, stones, beads or bottle tops to use as counters. Each person in turn puts their counters into the relevant bags, according to their priorities. They should put three counters for their first priority, two for their second and one for their third. The counters in each bag are then counted and the results announced. Another way of ranking priorities is to write or draw the risks on to cards and ask the group to prioritise them together by moving the cards around, putting the priority at the top.

TRANSECT WALK

This is a planned walk through the local area to explore different land uses (such as economic activities, agriculture, open spaces, houses) while taking notes, photographs and asking questions.

VENN DIAGRAM

This shows the key organisations and individuals in the local area and their relationships with each other.

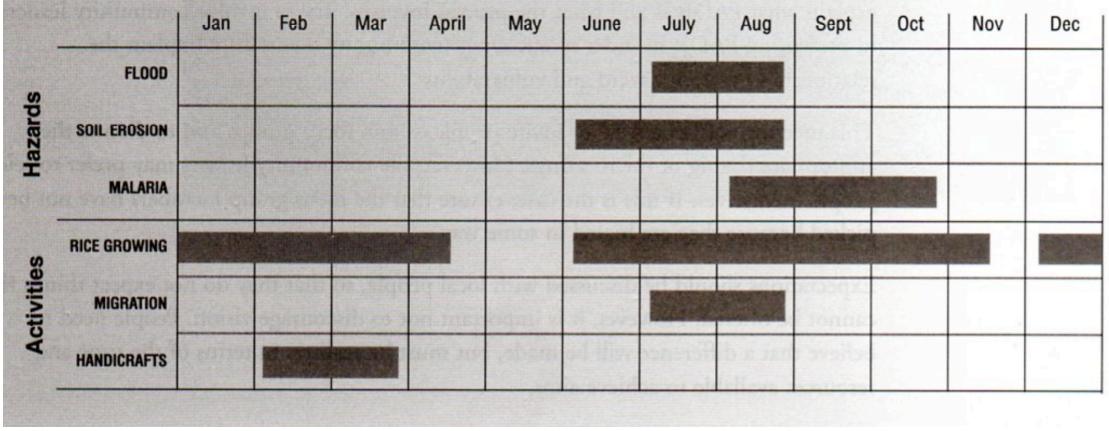


DIRECT OBSERVATION

By observing people and relationships, objects, structures, events and processes we can start to develop a picture of community issues.

SEASONAL CALENDAR

This shows when agricultural activities, festivals and other significant events take place in the local area. Hazards can be added to the chart to show which activities will be affected.



X.3.2 Hazard assessment

If local people face several types of hazards, it is necessary to rank them in order of threat. People should decide how to define which hazard is the most serious. For example, death and injury may be seen as more serious than loss of property. PADR should then be carried out for the hazard given the highest priority. If there is more than one hazard that is considered to be very important then each will need to be considered separately.

NOTE: If violent conflict is considered to be a priority hazard, either because conflict exists in the local area or because there is the potential of conflict, the PADR process should be used with caution. In extreme cases, it may be better to work with local people to address the conflict.

Hazard assessment involves an examination of the nature and behaviour of each hazard.

Look at:

- HISTORY (looking at how the hazard has affected local people in the past)
- Is the hazard part of normal life or rare?
- When was the last disaster?
- When was the biggest disaster?
- Is the hazard getting worse, better, or staying the same? Remember that climate change may be changing the characteristics of weather-related hazards.
- FREQUENCY (to find out the likelihood of the hazard happening)
- How often does the hazard happen?
- Is it more or less frequent than in the past?
- SPEED OF ONSET (to find out how much warning there is before the hazard happens)
- How quickly does the hazard happen?
- What warning signs are there?
- How do people define when a hazard becomes dangerous? (such as when water levels reach a certain height)
- LOCATION (to find out the size of the area affected by the hazard)

- Which areas are affected by the hazard?
- DURATION (to find out how long the hazard is likely to last)
- How long does the hazard last?
- SEVERITY (to find out how severe the hazard can be)
- How severe can the hazard be? For example, water depth, wind speed, Richter scale for earthquakes.

This information will depend on the experiences and memories of local people. It is also helpful to ask technical experts and look at official statistics. Representatives from focus groups could be given responsibility to collect this information. The facilitation team may be able to help by finding information from sources further away, such as weather bureau / meteorological offices, government departments or universities.

Outsiders may have more awareness of possible hazards than local people themselves, especially if the hazard is rare and local people have no experience of it. If this is the case, it should be discussed with local people. In addition, outsiders with knowledge about climate change could share with people the possibility of increased weather-related hazards in the area in the future.

X.3.3 Vulnerability assessment

The stages in the vulnerability assessment are in recommended order only. Some flexibility in approach will be needed. The questions in this section are only guideline questions and should be adapted as appropriate for the various focus groups and according to community issues.

When a hazard happens, elements at risk, such as people, crops, buildings and services, may be lost, damaged or disrupted. These elements are normally only identified after a disaster has happened in a ‘damage and needs assessment’. The action taken is to distribute relief items to meet immediate needs. This action does not address the reasons why the disaster happened. The affected community could therefore be hit by another disaster in the future when the same or a different hazard

strikes.

A needs assessment after a disaster looks at the immediate effects of the disaster on elements in the community. However, a vulnerability assessment looks at the potential for elements to be at risk. By acting on this type of information, it is possible to reduce the risk of disaster happening in the first place.

Vulnerability assessment involves looking at the:
ELEMENTS AT RISK to establish what the impact of the hazard could be - mainly factual information based on people's past experience
VULNERABLE CONDITIONS to establish why the elements are at risk
PRESSURES to establish who is creating the vulnerable conditions and how this is done
UNDERLYING CAUSES to establish why vulnerable conditions are created or ignored by the pressures
SPIRITUAL CONTEXT to consider what beliefs encourage, ignore or challenge vulnerability and its causes.

Each of the five categories of analysis is used to help ensure that a detailed understanding of vulnerability is achieved by the focus groups.

Be aware that what is considered a vulnerability in one category of analysis may be seen as a capacity in another category. Also, views on what is vulnerable and what is a capacity may vary from one group to another. For example, women may see the migration of men in search of work during hard times as a social vulnerability, which could also lead to the spread of HIV. However, men might view migration as an economic capacity.

Economic assets

Table X – 1: Guideline Questions for Vulnerability Assessment (Economic Category)

Elements at risk	**Vulnerable conditions**	**Pressures**	**Underlying causes**
WHAT are the likely impacts of the hazard?	**WHY** does the hazard affect the elements at risk?	**WHO** is creating the vulnerable conditions? **HOW** is this done?	**WHY** are vulnerable conditions created / ignored by the pressures?
• Which economic activities or assets are most affected by the hazard?	• Why does the hazard disrupt activities?	*Topics to consider:* • Work opportunities and wages • Credit and savings opportunities	• Are people denied access to work opportunities? Why? • Are people paid a fair wage? Why not? • Do people have access to finance schemes? Why not? • Is money lent under fair terms?
• Are people forced to sell assets? • What do people sell first, second, third?	• Why does this happen? Does anybody benefit from this?		
• Would basic needs (such as food and water) be affected, and how long does this last?	• Why are people unable to meet basic needs during the hazard?		
• Is it harder to borrow money during the hazard?	• Why can people not get a loan?		
Spiritual context • How does the spiritual context affect economic assets? • Does the church play any role in increasing economic vulnerability? If so, how?			

Natural assets

Table X – 2: Guideline Questions for Vulnerability Assessment (Natural Category)

Elements at risk	Vulnerable conditions	Pressures	Underlying causes
WHAT are the likely impacts of the hazard?	**WHY** does the hazard affect the elements at risk?	**WHO** is creating the vulnerable conditions? **HOW** is this done?	**WHY** are vulnerable conditions created / ignored by the pressures?
• Which natural assets are affected by the hazard? How are they affected?	• Why are these natural assets affected by the hazard? • How long does it take damaged natural assets to recover after the hazard? • Is there a lack of any natural assets? How does this affect people?	*Topics to consider:* • Local authorities • Land ownership • Logging / deforestation • Industry / pollution • Agriculture (large-scale) • Population growth	• Why is there a lack of natural assets? • Why are people denied access to natural assets?
Spiritual context • How does the spiritual context affect natural assets? • Does the church play a role in increasing vulnerability in relation to natural assets? If so, how?			

Constructed assets

Table X – 3: Guideline Questions for Vulnerability Assessment (Constructed Category)

Elements at risk	Vulnerable conditions	Pressures	Underlying causes
WHAT are the likely impacts of the hazard?	**WHY** does the hazard affect the elements at risk?	**WHO** is creating the vulnerable conditions? **HOW** is this done?	**WHY** are vulnerable conditions created / ignored by the pressures?
• What are buildings constructed from (such as mud, brick)? • How are these buildings affected by the hazard? • How are water supplies affected by the hazard? • How are tools and equipment affected by the hazard? • How are government or community buildings affected by the hazard? • How does the hazard affect communications? • How are power supplies affected by the hazard?	• Why are these affected by the hazard?	*Topics to consider:* • Land ownership • Local authorities • Religious groups • Building regulations • Access to community buildings	• Why are people unable to prevent damage to constructed assets? • Why do owners of constructed assets not help and how could they help?
Spiritual context • How does the spiritual context affect constructed assets? • Does the church play any role in increasing vulnerability in relation to constructed assets? If so, how?			

Individual assets

Table X – 4: Guideline Questions for Vulnerability Assessment (Individual Category)

Elements at risk	Vulnerable conditions	Pressures	Underlying causes
WHAT are the likely impacts of the hazard?	**WHY** does the hazard affect the elements at risk?	**WHO** is creating the vulnerable conditions? **HOW** is this done?	**WHY** are vulnerable conditions created / ignored by the pressures?
• Who is most likely to be affected: - during the hazard? - after the hazard? • What happens to these people? (For example, are they killed, injured, affected by illness, displaced, traumatised?) • Which diseases affect local people as a result of the hazard? • Who is most likely to be affected by these?	• Why are these people most likely to be affected? Consider: - mobility - health - skills - education and literacy • Is there any knowledge of what to do when a hazard hits?	*Topics to consider:* • Health services • Social services • Education and training	*Topics to consider:* • Access to health care • Access to social welfare schemes • Education policies and curriculum
Spiritual context • How does the spiritual context affect individual assets? • Does the church play any role in increasing individual vulnerability? If so, how?			

Social assets

Table X – 5: Guideline Questions for Vulnerability Assessment (Social Category)

Elements at risk	Vulnerable conditions	Pressures	Underlying causes
WHAT are the likely impacts of the hazard?	**WHY** does the hazard affect the elements at risk?	**WHO** is creating the vulnerable conditions? **HOW** is this done?	**WHY** are vulnerable conditions created / ignored by the pressures?
• How do relationships with different groups change in hard times? • What is the consequence of these changes? • How do relationships between men and women change?	• Why do some of these relationships get worse? • What more should be done to help? • Is there any conflict during hard times? • Is there any lack of leadership during crisis?	Topics to consider: • Local authorities • Traditional leadership • Social groups	• Do people have access to all the groups they want to? • How much influence do people have over the decisions made by leaders in times of disaster?
Spiritual context • How does the spiritual context affect social assets? • Does the church play any role in increasing social vulnerability? If so, how?			

Prioritising vulnerabilities

Once all of the vulnerabilities have been identified, focus groups should come together to prioritise the vulnerabilities that they want to address. Opinions may differ within and between focus groups. The facilitator should help the groups to find common ground in order to identify the priority vulnerabilities for the community as a whole. Other local people could be present at this meeting in order to enhance local ownership of the process.

Table X – 6: Example of Vulnerability Assessment - Drought in Ethiopia

Elements at risk	Vulnerable conditions	Pressures	Underlying causes
WHAT are the likely impacts of the hazard?	**WHY** does the hazard affect the elements at risk?	**WHO** is creating the vulnerable conditions? **HOW** is this done?	**WHY** are vulnerable conditions created / ignored by the pressures?
ECONOMIC ASSETS • Loss of crops • Loss of livestock • Forced sale of assets	• Livelihoods dependent on rain-fed agriculture • Extreme poverty • Decline in soil fertility	• MINISTRY OF HEALTH Limited healthcare provision • MINISTRY OF EDUCATION Limited support to primary schools • MINISTRY OF AGRICULTURE Limited support for farmers • VILLAGE ELDER Promote large family size • NATIONAL GOVERNMENT Development policy and budget, land ownership, environmental policy, disaster management and poverty reduction strategies • WORLD TRADE ORGANISATION Terms of trade • INTERNATIONAL FINANCIAL INSTITUTIONS Debt servicing • NGOS Development policies and practice • COPTIC CHURCH Festivals and ceremonies reduce number of livestock	• POLITICAL GOVERNANCE State ownership of land, corruption, lack of transparency and accountability, lack of participatory development planning, lack of concern for poor people, regional conflict, ineffective United Nations systems • ECONOMIC POLICIES Unfavourable terms of trade, Western secular values, greed • CULTURE Inappropriate cultural customs and practices
NATURAL ASSETS • Shortage of water • Dry pasture land • Soil erosion • Lack of wild food	• Unreliable rainfall • Environmental degradation • No forest		
CONSTRUCTED ASSETS • Shallow wells dry	• Limited water harvesting schemes • No protected water sources		
INDIVIDUAL ASSETS • Increased malnutrition • Increased morbidity • Increased mortality • Loss of strength • Increased stress	*Limited knowledge of:* • Natural resource management • Health care • Family planning • Government structures and processes • Human rights • Low literacy / education • Lack of vocational skills		
SOCIAL ASSETS • Increased conflict within and between families • Disruption to education • Increased migration	• Cost of education • Large family size • Competition for resources • Gender inequalities • Many traditional ceremonies • Weak civil society		
Spiritual context • Animistic beliefs, expensive religious ceremonies			

X.3.4 Capacity assessment

Capacity assessment should come after the vulnerability assessment, rather than at the same time. This is because people often find it difficult and confusing to constantly change from discussing their weaknesses and problems (vulnerabilities) to discussing their strengths and opportunities (capacities). There are, however, some exceptions to this rule.

Capacity assessment involves looking at:
PROTECTED ELEMENTS to identify which elements are not badly affected by the hazard
SAFE CONDITIONS to identify what capacities exist in relation to a hazard. These strengths may already be used, or have potential use
PRESSURE RELEASES to establish who is helping to create safe conditions and how this is done
POSITIVE UNDERLYING CAUSES to consider what political ideas, economic principles, and cultural practices support and motivate those helping to create safe conditions
SPIRITUAL CONTEXT to consider the ways in which the spiritual context helps to build capacity and reduce vulnerability.

Capacities are sometimes referred to as ‘coping mechanisms’ or ‘survival strategies’. However, these terms may not always be positive and healthy. For example, a household may cope with hardship through criminal activity, commercial sex work or selling of children.

Be aware that people might try to hide their strengths if they think they will get less outside help after revealing them. This is particularly the case where relief dependency has developed. Capacity assessment should therefore be closely linked with ‘action planning’ so that people have a reason for sharing their strengths.

Economic assets

Table X – 7: Guideline Questions for Capacity Assessment (Economic Category)

Protected elements	Safe conditions	Pressure releases	Positive underlying causes
WHICH elements are not badly affected by the hazard?	**WHAT** capacities exist that help protect elements at risk from the impact of the hazard?	**WHO** is helping to create safe conditions? **HOW** is this done?	**WHY** are safe conditions being supported?
• Which economic activities or assets are least affected by the hazard? • Which assets are never sold, even when times are very hard? • Is it possible to borrow money in an affordable way if necessary?	• Why are certain economic activities and assets not affected by the hazard? • Why are people not forced to sell certain assets? • How are people able to meet their basic needs (such as food and water) when a hazard happens? • Are there reserves of food or money for use in hard times? • Remember: some economic capacities may be illegal (such as cattle stealing) or damaging to health (such as selling sex)	• What organisations or institutions are present? (such as CBO, church, government) • How do these help local people economically in times of crisis? (such as loans, providing work, gifts in kind)	• What political ideas and policies are helping? • What economic principles are helping? • What cultural activities and beliefs are helping? • Are people provided with good work opportunities? If so, why? • Are people paid a fair wage? • Do people have access to finance schemes? • Is money lent under fair terms?
Spiritual context • What spiritual beliefs encourage the reduction of vulnerability? • What strengths does the church have to help improve economic capacity?			

Natural assets

Table X – 8: Guideline Questions for Capacity Assessment (Natural Category)

Protected elements	**Safe conditions**	**Pressure releases**	**Positive underlying causes**
WHICH elements are not badly affected by the hazard?	**WHAT** capacities exist that help protect elements at risk from the impact of the hazard?	**WHO** is helping to create safe conditions? **HOW** is this done?	**WHY** are safe conditions being supported?
• Which natural assets are not affected by the hazard? (such as trees, water, pasture, high land)	• Why are natural assets not affected by the hazard?	• Who owns or controls the use of natural assets in the local area? • Is greater access given to natural assets in times of crisis?	• What political ideas are helping? • What economic principles are helping? • What cultural activities and beliefs are helping?
• Do any natural assets benefit from the hazard?	• Why do some natural assets benefit from the hazard? • Which natural assets recover quickly after the hazard? Why? Are they protected? • Are any natural assets used in times of crisis (such as wild berries, roots, fish)? • Are natural assets used in special ways to protect people (such as floating bamboo platforms or banana tree rafts during floods)?		
Spiritual context • What spiritual beliefs encourage the reduction of vulnerability? • What strengths does the church have to help improve natural capacity?			

Constructed assets

Table X – 9: Guideline Questions for Capacity Assessment (Constructed Category)

Protected elements	**Safe conditions**	**Pressure releases**	**Positive underlying causes**
WHICH elements are not badly affected by the hazard?	**WHAT** capacities exist that help protect elements at risk from the impact of the hazard?	**WHO** is helping to create safe conditions? **HOW** is this done?	**WHY** are safe conditions being supported?
• What buildings are not affected by the hazard? • Are water supplies protected from the hazard? • Are tools and equipment protected from the hazard? • Are government or community buildings protected from the hazard? • Are communications protected from the hazard? • Are power supplies protected from the hazard?	• Why are constructed elements not affected by the hazard? • How are constructed elements protected from the hazard? • Are buildings used in special ways (such as for storage, shelter): - before the hazard? - during the hazard? - after the hazard? • Are people able to protect buildings (such as build raised platforms for houses in flood prone areas)? • Do people have alternative means of transport if roads are damaged? • Do people have alternative forms of power if electricity supply is cut off?	• Who owns or controls the use of safe buildings during times of crisis? • Who owns or controls the use of vehicles or boats? • Who has access to a phone or radio? • Do poor people have easy access to safe buildings during times of crisis? • Do poor people have access to transport and communications during times of crisis?	• What political ideas are helping? • What economic principles are helping? • What cultural activities and beliefs are helping?
Spiritual context • What spiritual beliefs encourage the reduction of vulnerability? • What strengths does the church have to help protect constructed assets?			

Individual assets

Table X – 10: Guideline Questions for Capacity Assessment (Individual Category)

Protected elements	Safe conditions	Pressure releases	Positive underlying causes
WHICH elements are not badly affected by the hazard?	**WHAT** capacities exist that help protect elements at risk from the impact of the hazard?	**WHO** is helping to create safe conditions? **HOW** is this done?	**WHY** are safe conditions being supported?
• Who is least affected: - during the hazard? - after the hazard?	• Why are these people least affected? Consider: - mobility - health - skills - education and literacy - traditional knowledge • Do some people have particular knowledge of what to do when a hazard hits (such as the elderly)? • Does anybody take on a special role to help others during a hazard?	• Who has the knowledge/ skills to cope with disaster? • How are knowledge and skills passed on to others? • Is there a system for passing on warning messages?	• What political ideas are helping? • What economic principles are helping? • What cultural activities and beliefs are helping?
Spiritual context • What spiritual beliefs encourage the reduction of vulnerability? • What strengths does the church have to help improve individual capacity?			

Social assets

Table X – 11: Guideline Questions for Capacity Assessment (Social Category)

Protected elements	Safe conditions	Pressure releases	Positive underlying causes
WHICH elements are not badly affected by the hazard?	**WHAT** capacities exist that help protect elements at risk from the impact of the hazard?	**WHO** is helping to create safe conditions? **HOW** is this done?	**WHY** are safe conditions being supported?
• Which groups are least affected by the hazard? • Are any relationships strengthened by the hazard?	• Why are some groups able to cope with the hazard? • Why do some relationships grow stronger during difficult times? • What role does extended family play?	• Who takes control or shows leadership during times of crisis? • Who gives most help to those affected? • Is help given fairly to all local people who are affected? • Do the poorest or most needy get any special assistance? • Do leaders give clear direction in a crisis?	• What political ideas are helping? • What economic principles are helping? • What cultural activities and beliefs are helping? In this culture, how do people help each other in times of crisis?
Spiritual context • What spiritual beliefs encourage the reduction of vulnerability? • What strengths does the church have to help improve co-operation and care?			

Table X – 12: Example of Capacity Assessment - Drought in Ethiopia

Protected elements	Safe conditions	Pressure releases	Positive underlying causes
WHICH elements are not badly affected by the hazard?	**WHAT** capacities exist that help protect elements at risk from the impact of the hazard?	**WHO** is helping to create safe conditions? **HOW** is this done?	**WHY** are safe conditions being supported?
ECONOMIC ASSETS		• United Nations and NGOs providing relief aid • Informal money lenders who provide credit • Strong local leadership • Local government schemes which target poor people	• Strong culture of community togetherness • Oral culture tradition to pass on knowledge and skills
• Some crops are not badly affected • Some types of livestock are not badly affected • Handicrafts are not badly affected	• High diversity of crops • High diversity of livestock • Land can be rented out • Some family assets are sold • Ability to carry out handicrafts • Informal saving schemes		
NATURAL ASSETS			
• Wild herbs and roots • Some vegetation	• High biodiversity • Land rotation		
CONSTRUCTED ASSETS			
• Hospital • Village health post • Village primary school • Village market			
INDIVIDUAL ASSETS			
• Skills • Knowledge • Labour (though possibly weakened)	• High motivation to learn • Ability to survive with minimal food • Knowledge to find wild food • Traditional farming skills • Knowledge of local medicines • Ability to work and migrate • Higher literacy of youth		
SOCIAL ASSETS			
• Religious groups	• Established, stable village in conflict-free area • Tradition of sharing labour and oxen • Tradition of exchanging agricultural products		
Spiritual context Strong religious belief. Active church.			

X.3.5 Key informant interviews

Before planning action, it is important to gain a wider understanding of vulnerabilities and capacities by talking to those who have an influence on local people. Some key informants may already have been identified, either by community leaders or because they were seen as 'pressures' in the vulnerability assessment or 'pressure releases' in the capacity assessment.

Local government officials are crucial to the success of disaster risk reduction activities because they control many resources and have influence over development activities in the area. Ensure that local government officials are interviewed. Any community-based actions should complement local government development plans wherever possible.

By communicating with key informants, there will be an increased chance that activities to reduce vulnerability will be supported, or at least not challenged, by those in power.

Discuss with the key informants the differences between their priorities and focus group priorities. These findings will help to influence the action plan.

X.3.6 Action planning

Ensure that this last step is given enough focus and time. If vulnerabilities and capacities are assessed in relation to different hazards, but no action is taken to reduce risk, time is wasted, relationships can be damaged and disaster risks will remain.

It is important to carry out the action planning soon after the capacity assessment so that people will continue to engage with the process and can see the fruits of their work. The action plan should address the priority vulnerabilities and build the capacities for long-term and sustainable risk reduction.

In larger communities it is not wise to invite everyone to carry out the action planning. This may result in confusion and lengthy discussions without decisions

being made. It may be more appropriate for representatives to carry out action planning. These could be a few members of the focus groups, community leaders and a limited number of other people who volunteer to participate.

Action planning should be connected as closely as possible to the work of an existing community based organisation (CBO), such as the local church. Action planning will work best if members of the church or CBO have been part of the facilitation team.

Through this approach, any new activities agreed will receive long-term support. From the church or CBO a 'Volunteer Task Force' with specific disaster-related responsibilities can be formed. If a church or CBO does not exist, then the 'Volunteer Task Force' members should be elected by local people.

The effectiveness of activities will also be improved if the community receives support from the local government. If government officials have been involved in earlier stages of the PADR process, it may be appropriate for them to be involved in this decision-making step. Otherwise, opportunities should be found to discuss community action plans with government officials later on.

External assistance

To challenge the pressures and underlying causes affecting the vulnerability of local people, action may need to be taken at local, national or international levels. External assistance may therefore be needed, such as from local government or NGOs. This can be in the form of:

FINANCE - For example, finance for constructed risk reduction measures such as flood platforms, or for the introduction of drought resistant crops and raised tube wells.

ADVOCACY - This may involve gaining support for local plans from government officials and other 'powerful' groups. At a national level, this might involve incorporating disaster awareness in school curricula. Internationally, it might involve advocacy on policy issues such as fair trade or debt relief.

TRAINING - At regular intervals (such as quarterly) the facilitation team may carry out training or motivation activities with the 'Volunteer Task Force' and other appropriate local people in order to maintain interest and enthusiasm.

Where external assistance is needed, the facilitation team should try to help the 'Volunteer Task Force' to obtain such assistance.

Advocacy

Advocacy is often necessary to challenge the pressures and underlying causes affecting vulnerability. People are often cautious about advocacy work because they associate it with aggressive campaigns targeting government departments. However, this is only one type of advocacy work. In many cases, collaboration is more appropriate and effective than confrontation.

Table X – 13: Steps in Advocacy

TOPIC	CONSIDER
ISSUE / PROBLEM	**What is the problem?** This will have been identified during the hazard and vulnerability assessments.
EFFECTS	**What are the effects of the problem?** The PADR process will have provided a lot of information about how the problem is affecting local people. This will be understood in terms of economic, natural, constructed, individual and social effects.
CAUSES	**What are the causes of the problem?** The vulnerability assessment will have identified the pressures and underlying causes.
POTENTIAL SOLUTIONS	**What needs to be done?** What are possible solutions? Ideas may have been discussed already during action planning. What are their advantages and disadvantages? Are the ideas realistic? What will be the indicators of success?
TARGETS	**Who has the power to do something to bring about change?** This is likely to be the government officials but may also include churches, businesses, community leaders and Community Based Organisations. The PADR process should have helped to improve relationships between local people and these groups. Therefore, they may be very willing to discuss ideas, and advocacy work may be quite easy.
POTENTIAL ALLIES	**Who is trying to address the issue at the moment?** Is it appropriate to work with them? Is their activity effective? Are there people who are not yet addressing the issue, but could be persuaded to help?
RISKS AND ASSUMPTIONS	**What risks are there in getting involved in this advocacy work?** How can these risks be reduced? What are the consequences if the issue is not addressed? Have we made any assumptions about the underlying causes of people's vulnerability and about those in power? If so, who should we speak to in order to understand the reality? Do the facilitation team and local people have the ability to address this problem?
METHODS	**What methods can be used?** Can these methods be carried out confidently? Have they worked before? Are there alternatives? Do the necessary skills and resources exist?

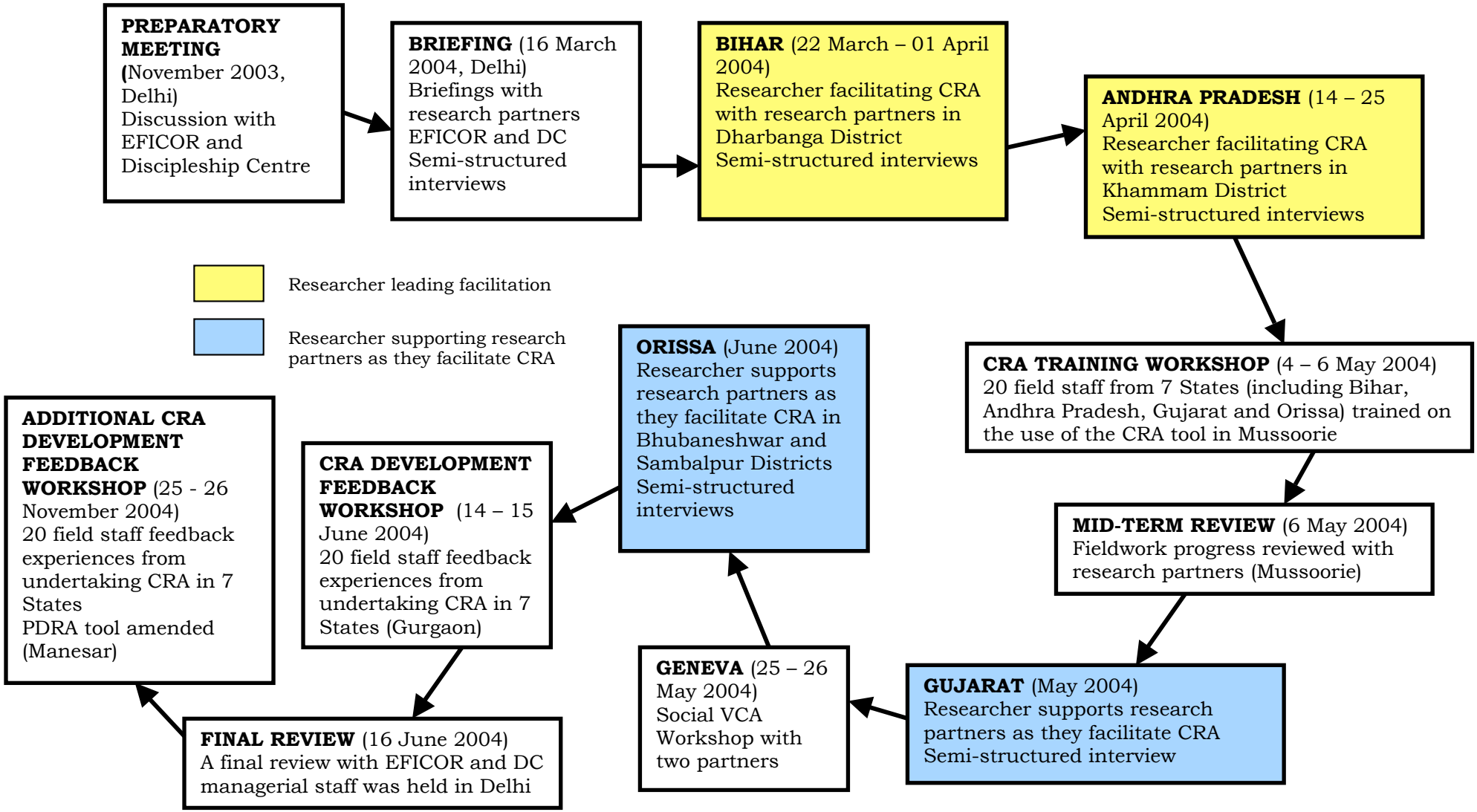
X.4 Improving Effectiveness

Regular monitoring of activities is also needed as the scale and nature of the hazards and people's vulnerability to them may change. Activities may need to be adjusted to suit new circumstances. It is advisable to repeat the whole PADR process every three years or so.

APPENDIX Y

Key Milestones in Primary Fieldwork

Figure Y – 1: Key Milestones in Primary Fieldwork



APPENDIX Z

Action Research Partners in India

Z.1 Fieldwork in Bihar and Gujarat with Discipleship Centre

Discipleship Centre (DC) runs development projects in Rajasthan, Uttar Pradesh, Bihar, and in Delhi. DC has responded to most of the major Indian disasters in recent years. In Orissa and in Gujarat this relief work led on to longer-term, developmental interventions. However DC only became involved in DRR relatively recently, following the Tezpur Workshop of April 2002 (see Appendix A) and the devastating floods in Bihar that same year.

The Bihar Case Study (see Appendix B) provides details on DC's work in Dharbanga District.

Z.2 Fieldwork in Andhra Pradesh and Orissa with EFICOR

EFICOR has directly implemented projects in the Northern States of India and run projects jointly with indigenous Christian Churches and missions throughout the country. It has carried out major relief interventions in response to the Maharashtra earthquake in 1994, the Orissa cyclone in 1999 and the Gujarat earthquake in 2001, plus smaller responses to many more localised disasters. EFICOR specialises in training community development organisers.

EFICOR became involved in DRR following the Orissa cyclone (1999), but has expanded this type of work into Andhra Pradesh from January 2003. Interventions in Khammam District of Andhra Pradesh have included the development of community organisations (particularly village disaster-related committees), contingency planning, volunteer training, protection of water supplies, provision of boats, alternative crops and tree plantation. Further details on EFICOR's work on DRR in Andhra Pradesh can be found in Tearfund (2005b).

EFICOR also began DRR work in Bihar in 2004.

APPENDIX AA

Guideline Questions for Testing Community Risk Assessment Tool

DISASTER RISK ANALYSIS QUESTIONS

Familiarisation: Take a ***Transect Walk*** with village leader(s) / Village Development Committee etc.

FOCUS GROUPS

Suggestions: Women's Self Help Groups, Men's Groups, Employers / Landowners, Most Vulnerable Groups (defined by community), Children / Youths, Elderly, Disabled

STEP 1: Hazard Assessment

Ice-Breaker: What is **the best / most positive aspect** of living in this community?

IDENTIFICATION

Natural: What **natural hazards** (shocks / threats, disasters) affect this community?

Man-Made: Is there **civil unrest / conflict** affecting this community?

Ranking: Which of these hazards (natural and man-made) is the most significant?

CHARACTERISTICS

PRA tools: Hazard Mapping, Historical Profile, Stories

For most important hazard(s):

History: When was the last hazard/disaster? When was the biggest disaster? Are hazards getting worse / better / or staying the same?

Frequency: How often does it occur?

Scope: How large an area is affected?

Intensity / Severity: How strong/damaging is the hazard?

Speed of Onset: How quickly does it arrive?

Duration: How long does it last?

COMMUNITY MANAGEMENT

Early Warning System: What warning signals exist? Whose responsibility is it to warn?

Danger Levels: How do you define when a hazard becomes dangerous?

EXTERNAL FACTORS

Who else is affecting the hazard?

APPENDIX AB

Fieldwork in Dharbanga District, Bihar

Photograph AB – 1: Children in Bihar

Source: Courtenay Cabot Venton

Table AB – 1: Fieldwork in Dharbanga District, Bihar

Date	Village	Activity	Attendance
23 March 2004	Kothiya Balwahi	Observation and informal discussions	Large open meeting
	Badi Balwahi	Observation and informal discussions	Large open meeting
	Choti Balwahi	Transect Walk	n/a
24 March 2004	Kothiya Balwahi	Focus group meeting with women's self help group members	15
		Focus group meeting with volunteers (men) and village leader	4
		Meeting with disabled man (identified by community members as vulnerable)	1
25 March 2004	Lavatola and Godhiara (combined)	Focus group meeting with women's self help group members	50
		Focus group meeting with men	25

Date	Village	Activity	Attendance
29 March 2004	Mushepur	Observation and open meeting	80 – 120
	Ganipur	Observation and open meeting	80 – 120
	Gyansthan	Observation and open meeting	80 – 120
	Narvidarya Paswan Tola and Narvidarya Sahani Tola (combined)	Focus group meeting with men	15

APPENDIX AC

Fieldwork in Khammam District, Andhra Pradesh

Photograph AC – 1: Man Carrying Water in Khammam District, Andhra Pradesh

Source: Courtenay Cabot Venton

Table AC – 1: Fieldwork in Khammam District, Andhra Pradesh

Date	Village	Activity	Attendance
14 April 2004	Polipaka	Transect Walk with Village Development Committee	8
18 April 2004	Mal Kasinagaram	Focus group meeting with women's self help group members Focus group meeting with men (mainly Village Development Committee members) Focus group meeting with male farmers using new 'hybrid' seed	15 (rising to 30) 20 2
21 April 2004	54 households on the banks of the confluence of the Godavari river and two tributaries	Observation and open meeting	50 (reducing to 15)

APPENDIX AD

Mussoorie Community Risk Assessment Training Workshop List of Participants

Table AD – 1: Mussoorie Community Risk Assessment Training Workshop List of Participants

Names marked in bold are managerial staff assigned to work alongside the researcher in the development of the CRA tool.

Name	Location	Organisation
Gabriel Das	Bihar	Discipleship Centre
Japsi Nayak	Orissa	
Saroj Daniel	Delhi	
Dinesh Kumar	Delhi	
Besson Samuel	Gujarat	
Satinder	Rajasthan	
Messam Abbas	Uttar Pradesh	
Alex Joseph	Delhi	
Samuel Patnaik	Orissa	EFICOR
Songram Keshor Kar	Orissa	
Harshanando Pradhan	Orissa	
Daich Kishore	Jkarkhand	
Esther Ghosh	Delhi	
Harshan K.Y.	Andhra Pradesh	
Roy K. Alex	Delhi	
Sujal Kumar Lima	Orissa	
Thankachan Andrews	Delhi	
MS.S Gill	Delhi	
Promod Kumar Pal	Andhra Pradesh	
Madan Kumar	Andhra Pradesh	
Bob Hansford	UK	Tearfund
Courtenay Venton	UK	ERM
Paul Venton	UK	Tearfund

Photograph AD – 1: Mussoorie Workshop Participants

Source: Courtenay Cabot Venton

APPENDIX AE

Community Risk Assessment Development Feedback Workshop Participants' Briefing

AE.1 Background

Together Tearfund, EFICOR and Discipleship Centre (DC) are developing a method of assessing people's vulnerability and capacity in relation to multi hazards as experienced in different States of India. The method adopted is called 'Participatory Disaster Risk Analysis' (PDRA)[i]. PDRA has also been tested in Ethiopia and Eritrea and will be tested in other countries too. The data collected through PDRA can be used for appropriate action planning with the community and other stakeholders (government, other NGOs, landowners etc), so that vulnerability to hazards can be reduced and capacities to cope with them increased.

The importance of good facilitation in helping vulnerable groups achieve this aim is of paramount importance. Not only must the facilitator be conversant with 'normal' community development and 'normal' disaster relief practices but in hazardous areas of India, and elsewhere, it is necessary for this same person / team to understand the connection between development, disasters and vulnerability. Some of the key characteristics of a facilitator that may possess these skills are:

- Ability to 'empower' communities to take their own action.
- Ability to use PRA techniques.
- Ability to distinguish between different forms of vulnerability (economic, natural, physical, human and social).
- Ability to expose and support capacities.
- Ability to apply vulnerability reduction approach in pre and post disaster settings.
- Ability to understand the 'progression of vulnerability' from root causes to the creation of unsafe conditions ('Crunch Model').
- Ability to address root causes sensitively through advocacy.

[i] This name was later changed to 'Participatory Assessment of Disaster Risk' (PADR)

This incomplete list begins to highlight the immense pressure on field staff as they undertake fieldwork in hazardous areas amongst vulnerable people. Any tool, guidelines, methodology or training must support and not confuse or hinder this vital work. As the PDRA tool is aimed for use by field staff it is right that it is partly developed and certainly tested by the people who ultimately will use it: YOU!

The PDRA tool goes beyond other vulnerability and capacity assessment tools by:

- Providing a practical resource for field staff (rather than relying on a theoretical approach).
- Providing 5 categories of analysis (economic, natural, physical, human and social) to ensure all forms of vulnerability and capacity are included.
- Linking local level (micro) vulnerability with the macro level causes of this vulnerability to support advocacy.
- Through good facilitation; empowering the community by helping its members to better understand its strengths and weaknesses, and the reasons for them.

This feedback event is critical in the development of the PDRA tool, as it is now that the project can hear from the people who have been using it: EFICOR and DC field staff

AE.2 Objectives

1. To share findings from the use of the PDRA tool and to confirm its value in analysing a variety of hazard situations.
2. To consolidate learning about the tool itself, identify any weaknesses and gather ideas as to how it could be further improved.
3. To consider the use of PDRA findings in the design of appropriate programme interventions, at local and national levels.

AE.3 Presentation

In order to learn from each other, each field team representative is asked to make a 20-minute informal ***presentation*** using OHP or flip charts on "Experience with PDRA in (field location)". Time will also be allowed for questions. A prize will be given for the most creative presentation!!

The points to cover in the presentation are listed below, but you may wish to include others:

- Brief overview of field location.
- Disaster risk characteristics as identified through PDRA (hazards, vulnerabilities, capacities, dynamic pressures and underlying causes).

Also you may like to briefly mention:

- Training of colleagues – how was this done, any difficulties (language barriers, concept etc)?
- Composition and roles of the team members (facilitator, note-taker, translator, resource person, women's roles).
- Preparation – how did you prepare before doing PDRA?
- Focus groups - who did you meet, what size were the groups, any difficulties?
- Key informants - who did you meet, any difficulties?

AE.4 Problem Tree[ii]

Each team is also requested to try and produce a ***'problem tree',*** on flip chart paper if available, to bring to the event. These 'problem trees' will be displayed on the wall at the start of the Feedback Event. Time and support will be given during the 2 days at the feedback event to discuss / add more detail / improve these trees. The 'problem tree' should illustrate:

1. One key 'element at risk' as the central problem affected by a hazard (the trunk of the tree) (e.g. for economic category - crop failure due to drought, natural category – loss of safe drinking water due to earthquake, physical category – loss of 'kutcha' house due to flood, human category – injury of

[ii] See Appendix AR for an example of a 'Problem Tree' as developed for presentation at this workshop by the DC team working in the primary fieldwork location of Dharbanga District, Bihar

elderly person due to earthquake, social category – breakdown of village leadership due to cyclone. These are just suggestions, please choose the problem yourself)

2. The effects of this as the branches of the tree.
3. The reasons why this element is at risk as the roots of the tree, going from vulnerability factors to dynamic pressures and underlying causes.

AE.5 Workshop Schedule

The workshop was held on 14-15 June 2004 with the following schedule.

Table AE – 1: Schedule for Community Risk Assessment Feedback Workshop

Time	Monday	Tuesday
9.30am	Check-in Photos of Bihar, Andhra Pradesh, Gujarat Problem Tree Gallery	Summary of Field Presentations (Paul) Problem Tree Gallery
Tea/Coffee		
11.00am	Welcome and Programme Overview (Paul, 20 mins) House rules (Sanjeev, 5 mins) Mussoorie Training Refresher (Roy, Paul, 45 mins) Field Presentations (2) (45 mins)	SWOT analysis (Groups, 60 mins) SWOT analysis feedback
Lunch		
2.00pm	Geneva Conference Feedback (Roy, Paul, 25 mins) Field Presentations (2) (45 mins) DMP Success Stories (Paul, 20 mins)	Good Facilitation Skills (Sanjeev)
Tea/coffee		
3.45pm	Field Presentations (2) (45 mins) Representing Crunch Model as Problem Tree (Paul, 10 mins) Field Presentation (1) (20 mins)	Next Steps – towards programme interventions (Roy, Sanjeev) Closing Address

APPENDIX AF

Additional Community Risk Assessment Development Feedback Workshop

AF.1 Participants' Feedback on the Community Risk Assessment Tool

Participants (representing 7 project locations / States) were asked to feedback on their experiences of using 'Participatory Disaster Risk Analysis' (PDRA)[i] over the preceding few months. They were provided with a template to assist in this, in the form of set questions as listed below:

1. What methodology for undertaking PDRA have you used? Provide details on:
   - Order of steps taken.
   - Question sets designed (have they been translated?)
   - Time required for each step in PDRA.
   - Team members needed.
   - Focus groups.
   - PRA techniques used.
2. How have you managed people's expectations when undertaking PDRA?
3. Have people exaggerated vulnerabilities and hidden capacities? If so how has this been dealt with?
4. Have you encountered any trouble / difficulties when identifying and dealing with dynamic pressures and underlying causes, how sensitive are these issues?
5. How useful / effective was PDRA at identifying vulnerabilities and capacities ahead of disaster situations (i.e. monsoon floods)?
6. Has PDRA influenced your programming, or has it just been useful for collecting data?
7. What have you found out that you did not know before?
8. What has been most important, the product of PDRA or the process of doing the PDRA?

[i] The name was later changed to 'Participatory Assessment of Disaster Risk' (PADR)

9. What modifications to the PDRA do you recommend?
10. What areas of PDRA are you having difficulty with?

AF.2 Participants' Feedback on the Bihar Floods 2004

Considerable energy was invested in analysing the situation in Bihar, as DC had been engaged in PDRA (and normal activities) ahead of the flooding in July 2004 and were still working in the area post the flood response[ii]. Therefore there was a significant opportunity to learn about the effectiveness of PDRA and of DMP activities. Questions asked included:

1. How did the community respond during the flood?
2. What was the main impact of the flooding (human / social / natural / economic / physical?
3. Was the flood impact noticeably different to affected communities outside of the immediate programme area?
4. How did the early warning systems function?
5. Did the project interventions result in a significant reduction of disaster losses, in lives and in the social, economic and environmental assets and infrastructure at the community / household level?
6. What improvements to the programme could be made in light of the recent experience?
7. Have the local government being involved in this DMP work?

AF.3 Linking Community Risk Assessment with Programming

The final afternoon was spent in small group discussion and plenary about linking PDRA with programming. The emphasis was upon the use of the 'Problem Tree' as a tool to aid this process.

[ii] EFICOR also shared some of their experiences in Bihar following relief activities post the July 2004 floods

APPENDIX AG

Development of Community Risk Assessment Tool – Supplementary Fieldwork

AG.1 Feedback From the Community Risk Assessment Tool's use by Tearfund in Africa

Through the period 2004 – 2005, the CRA tool was tested in Eritrea, Ethiopia, Malawi, North Sudan, South Sudan, and Sierra Leone by Tearfund staff and partner organisations. There was a significant difference between the methodological approaches adopted in these locations compared with India. In particular, the duration of each of these pieces of fieldwork was limited to a maximum of two weeks, which included a training workshop ahead of field-testing. The researcher did not undertake this fieldwork.

AG. 2 Learning Review

A learning review was undertaken on 9 December 2004 based on all the fieldwork undertaken to date (including India, but not Sierra Leone), and the researcher collated the findings and drew on these experiences in the development of the CRA tool.

AG.3 Community Risk Assessment in Delhi Slum, India

The CRA tool was tested alongside a capacity building programme implemented by Discipleship Centre (DC) in a Delhi slum (19 - 25 November 2004). Particular emphasis was given to an analysis of people's capacities.

AG.4 Fieldwork in the Philippines

Two field trips were undertaken, both with staff from the Centre for Disaster Preparedness (CDP) in April 2005. The first was to San Mateo, Rizal near Manila to meet members of the People's Organisation Buklod Tao and members of the Barangay[i] Disaster Coordinating Council (local government officials). The second field trip was to Infanta, Quezon Province: the scene of a major flood disaster in

[i] Local administrative level

December 2004. Meetings were held at the local government office with the Mayor and local representatives from PAGASA and Oxfam.

AG.5 Community Risk Assessment Training Workshop in Aceh Province, Indonesia

Following the Indian Ocean tsunami (December 2004), the researcher led training of World Relief and Tearfund field staff in Banda Aceh and Meulaboh, Indonesia (1 - 16 June 2005). The purpose was to explore the opportunities and constraints in undertaking CRA in a post-disaster context so as to reduce vulnerability to future hazards as well as meeting immediate needs. The CRA tool was the basis of fieldwork undertaken in focus groups in Kreung Raya, near Banda Aceh, and Payapeunaga Village, near Meulaboh. Findings from this experience influenced the development of the CRA methodology.

From this point in the 'Supplementary Fieldwork' the CRA tool was finalised and published as 'Participatory Assessment of Disaster Risk' (PADR) (Venton and Hansford, 2006)

AG.6 Community Risk Assessment Training Workshop in Bihar, India (Primary Fieldwork Location)

The researcher led a workshop in Dharbanga District, Bihar (the same as the primary fieldwork location) for existing research partners from EFICOR and Discipleship Centre (DC) plus staff from other Tearfund partner organisations (20 - 28 February 2006). The workshop had the following objectives:

1. To increase the capacity of participants to use the 'Participatory Assessment of Disaster Risk' (PADR) methodology, including the development of community owned action plans.
2. To increase awareness of the importance of local level advocacy as a tool to help achieve a reduction in disaster risk.

A further objective[ii] of this fieldwork had little direct bearing on the research objectives.

A key element of this training was its practical application. Several fieldtrips were made throughout the course of the training. This was designed so that participants could test PADR in villages where Discipleship Centre had already undertaken preliminary meetings with community leaders in advance of an intention to carry out long-term DRR work in those communities. Detailed notes were taken during the regular participant's feedback sessions.

Photograph AG – 1: Participants of CRA Training Workshop in Bihar

Source: Paul Venton

AG.7 Community Risk Assessment Training Workshop in Rawalpindi, Pakistan

Following the South Asia earthquake (October 2005) the researcher led a workshop held in Rawalpindi, Pakistan (9 - 13 May 2006) focused on the PADR methodology and how it could be applied in a post-disaster context. Developmental relief, participation, strengthening capacities, reducing long-term vulnerability and advocacy were key themes for the five-day workshop. One of these days was spent in the field, in Balakot, undertaking focus group work based on PADR.

[ii] To improve knowledge among participants of current community based disaster management work undertaken by Discipleship Centre and EFICOR in Bihar

AG.8 Community Risk Assessment Training Workshop in Peshawar, Pakistan

The researcher led a workshop in Peshawar, Pakistan (10 - 17 March 2007) with the purpose of strengthening the capacity of NGOs working on post-disaster relief, reconstruction and rehabilitation activities following the October 2005 earthquake. PADR formed a central component of the training.

APPENDIX AH

Good Practice Community Based Disaster Risk Management Community Fieldwork Guidelines

The below information comprises selected extracts from the guidelines provided to facilitators[i]. This was drafted by Tearfund and has been edited for ease of readership and consistency of terminology.

AH.1 Information to be obtained from the Community

The facilitation of the community to obtain their understanding of good practice CBDRM can be broken down into separate sections. The first section covers general background issues related to past disasters, the later sections then categorise these discussions in line with the 'Livelihoods Framework'. ***Please note, it is very important to maintain these categories when writing up the research to provide a consistent analysis of differing communities in different hazards.***

However, you may not want to use the order suggested below and find it helpful to facilitate the community through:

a) A chronological approach going step by step through the last disaster they went through by describing a "day in the life of"; or
b) An oral tradition of telling the story, as it has been remembered, in its erratic form, which will often start by stating what was important for the individual or focus group.

The facilitator needs to identify what approaches work for them and the community. The trick will be to identify when good practice is being discussed and intervene with some questions to expand the understanding of that good practice. Fundamentally, it is

[i] Based on version dated 17 July 2006

important there is an experienced facilitator with an understanding of DRR who can motivate the focus groups and ask appropriate questions.

Remember, the aim is to identify what worked for the communities in the context of previous hazards they have experienced, or what they would do differently. It is important to maintain (where possible) an "upbeat" reflection on what the community has experienced, celebrating with them where things went well, and helping them reflect where they have had control and their own capacities to achieve change in the future. Each of the bullet points can be turned into different types of questions at the discretion of the facilitator, but the aim of the bullets is to summarise the type of information that needs to be identified. Note: it is possible to turn a negative into a positive i.e. if an action did not work for them as a community, how would they change it to ensure that any actions that are taken before, during and after a disaster in the future will contribute towards their welfare and well being.

Finally, this work is a piece of research. Please be aware of expectations that these questions can raise with communities – especially those communities who are used to having aid agencies working with them.

General

Purpose: To get an overview of the impact of the disaster and how the community responded in the before, during and after stages of the disaster.

- Get the community to name the most important natural hazard that they face, and rank any others that they face. Please attempt to identify the hazard within the following classifications.
    - Flood
    - Drought
    - Storm
    - Earthquake

- Tsunami
- Volcano
- Landslide
- Disease
- Other (specify)

- Identify when their top hazard last hit the community, how frequent does it occur and whether there are any new trends. Note: If the trend is becoming less serious explore what factors have reduced its frequency and whether it has been replaced.

- Identify any advance warnings the community may have received, who received and distributed them, and how useful they were.

- Get the community to talk about any actions (including financial) they took to reduce the impact of the approaching hazard once they knew it was coming. (Impact should be determined by what the community defines as important, but it should roughly fall into the categories of human, social, physical / infrastructure, natural and economic.)

- Once the disaster was with them, get them to describe the "successful" actions they took, both as individuals and as a community. If necessary get several people to describe an hour-by-hour account for fast onset disasters.

- Identify the most pressing needs, as defined by the community, during and in the aftermath of the disaster (e.g. information, employment, healthcare, food etc) and discuss if and how these were met (including outside support such as government or NGOs). Identify if critical needs were met effectively or ineffectively, and what would need to change to make it better next time.

Human / Individual

Purpose: To identify the attitude, knowledge and skills used by the community in times of disaster, with a special emphasis on the needs of the most vulnerable. Note: Spiritual and health issues are most likely to come out under this category.

- In human / individual terms, identify the impact of the most common hazard on the community before, during and after the event

- In human / individual terms, identify who was impacted the most by the hazard before, during and after the disaster, and why was this so.

- Identify coping mechanisms – specific ways in which the individual effectively absorbed and survived the shock of the disaster e.g. eating roots in times of famine, climbing trees in times of flood etc.

- Identify if there are any historic coping mechanisms not used any more, and why their use is not relevant. Review how this coping mechanism was "lost".

- Review with the community how these coping mechanisms do or do not support the needs of the most vulnerable (i.e. those most impacted). Identify the most effective and why they worked so well.

- Get the community to discuss what they would do differently next time to prepare for, respond to and recover from any potential disaster

Social

Purpose: To identify how social networks within the community works in a disaster, and how they can be effectively used to reduce vulnerability.

- Identify the impact of the hazard (before, during and after) on social networks which traditionally are the cohesion of the community (e.g. church leader and deacons, teachers and headmaster, local business leaders, chief and elders, local government officers etc)

- Discuss with the community who coordinated the reaction to the early warning, the response to the disaster and took leadership in recovery

- Review the ways in which the extended family as a separate social network reacted to the disaster both before, during and after the impact

- Look at how other social networks reacted to the needs of the community, with special emphasis on those most in need and vulnerable, both before, during and after the disaster

- Discuss sources of information, communication networks and processes within the community and how these were used before, during and after the disaster. Identify gaps both in terms of who hears certain messages and how the content is decided e.g. how did people know where to go to receive aid

Natural

Purpose: To identify the role of natural resources in reducing vulnerability to disasters.
Note: agricultural resources (e.g. soil fertility, planned or natural orchards etc) can come under this classification as well as economic.

- Identify the impact of the hazard (during and after) on the environment and any natural resources that are actively used by the community.

- Identify which natural resources (even those which are not commonly used) were the most effective during the disaster (e.g. alternative water supplies, tall trees for shelter etc.)

- Discuss whether these natural resources are commonly used as a coping mechanism, and if so whether access to it or availability of it as a resource has diminished in recent years

- Discuss with the community the value they place on these resources, and whether any measures were taken before, during or after to protect them. Consider other pressures placed on these natural resources e.g. trees used for firewood or soil protection

Physical

Purpose: To identify what physical infrastructure is most useful before, during and after a disaster

- Identify the impact of the hazard (during and after) on the physical infrastructure of the community and the surrounding area, with special reference to essential services such as bridges, schools, clinics, any form of communications, and food supply

- Discuss how private and public buildings were used during and immediately after the disaster

- Identify how communication infrastructure was affected (e.g. loss of radios) and how transportation occurred during and after disaster

- Identify whether there was any conscious protection of any infrastructure including buildings and personal assets which could not be taken in the event of any displacement

Economic

Purpose: To identify local economic systems which enable people to cope with and recover from disaster.

- Identify the impact of the hazard (before, during and after) on the micro economy of the community and the surrounding area.

- Discuss how livelihoods were affected during and after the disaster and the consequential disruption to cash flow within the household

- Identify if there were any alternative ways of making a livelihood or subsistence living. And if not how did people survive – were there safety nets such as loans, assets or savings which economically sustained households

- Review what mechanisms or systems were available before, during and after impact of the disaster for buying and selling goods and foodstuffs

Suggested Concluding Question

- If you could meet with the leader of your country, what would you tell him was the most important action in reducing disasters in your community?

APPENDIX AI

Good Practice Community Based Disaster Risk Management List of Expert Academics and Practitioners

Table AI – 1: List of Expert Academics and Practitioners

Name	Position	Organisation
Adisak Thepart	Director	Disaster Prevention Promotion Bureau, Department of Disaster Prevention & Mitigation (DDPM) (Thailand)
Ahsan Uddin Ahmed	Executive Director	Bangladesh Unnayan Parishad (BUP) Research Institute (Bangladesh)
Ali Rizvi	Environmental Advisor / Senior Programme Advisor	Care International (Sri Lanka)
Allan Findlay	Head of Department of Geography	University of Dundee (UK)
Allan Lavell	Coordinator	Disaster Risk Social Science Research Programme Secretariat General of the Latin American Social Science Faculty – FLACSO (Latin America)
Anita Shah	Disaster Management Programme Officer	UNDP
Annelies Heijmans	Researcher / PhD Candidate	Wageningen University (The Netherlands)
Aslam Alam	National Program Management Expert	Comprehensive Disaster Management Programme (CDMP), Disaster Management Bureau, Ministry of Food and Disaster Management (Bangladesh)
Bruno Haghebaert	Acting Head	ProVention Consortium (Geneva)
Dirk Frans	Sociologist and Senior Advisor	(The Netherlands)
Edward Turvill	DRR Coordinator	Action Contre La Faim (ACF) (Indonesia)
Fe Andaya,	President	Centre for Disaster Preparedness (CDP) (Philippines)

Name	Position	Organisation
Haydeé Carrasco	Project Manager – Livelihoods Risk Approaches	Practical Action Latin America (Peru)
Hilda de Bojórquez	Director	Asociacion A-Brazo (Central America)
Jan Gerrit Van Uffelen	Consultant	(The Netherlands)
John Twigg		University College London (UK)
Knud Falk	Disaster Preparedness Advisor	Danish Red Cross (Denmark)
Kwan Kladstrup	Assistant Country Director	Concern Worldwide (Afghanistan)
Marcus Moench	Director	Institute for Social and Environmental Transition
Mark Pelling	Reader in Human Geography	King's College London (UK)
Mckey Mphepo	Independent Consultant	(Malawi)
Md. Shamsuddoha (Doha)	Team Member	Participatory Research & Development Initiative (PRDI) (Bangladesh)
Mihir Bhatt	Honorary Director	All India Disaster Mitigation Institute (India)
Kwanli Kladstrup	Assistant Country Director	Concern Worldwide
N Hari Krishna[i]	Program Specialist	Oxfam America (India)
Paradzayi Bongo	Project Manager	Practical Action (Southern Africa)
Patrick Fox	Consultant	(Swedish Red Cross & IFRC) (Sri Lanka)
Philip Buckle	Senior Lecturer Disaster Management	Coventry University (UK)
Rajeev Issar	Programme Associate	UNDP (India)

[i] In support of this questionnaire an informal meeting was also held in Boston, USA, December 2006

Name	Position	Organisation
Rajib Shaw	Associate Professor	Kyoto University (Japan)
S. Mariyadas	Programme Coordinator – Disaster Preparedness	Oxfam GB (Sri Lanka)
Saroj Kumar Jha	Senior Infrastructure Specialist	The World Bank Group (USA)
Stella Okoronkwo	Consultant	(Cote d'Ivoire)
Zenaida Delica-Willison	South-South Disaster Risk Reduction Advisor	UNDP (Thailand)

APPENDIX AJ

Good Practice Community Based Disaster Risk Management Letter and Questionnaire for Expert Academics and Practitioners

AJ.1 Letter to Expert Academics and Practitioners

13 October 2006

Dear colleague

For several years the British NGO Tearfund has been advocating with governments and donors for improved disaster risk reduction (DRR) policy and practice[i]. We are now appealing for your assistance with a new research project, funded by DFID CHF.

We believe that community-based DRR measures should be facilitated through a strong government policy framework. Likewise local and national risk reduction should be supported by institutional donor policy[ii]. All this is especially important in the context of increasing vulnerability and climate change. To achieve this 'scaling up' it is important to be able to demonstrate good practice at the local level, as well as identify and seek to address the constraints faced by local and national governments to investing in this.

Therefore this research project is identifying examples of good practice community-based disaster risk reduction through a series of semi-structured interviews with focus groups in hazard-prone communities of Afghanistan, Bangladesh, Burkina Faso, India, Indonesia, Malawi, Sri Lanka and Zambia. Identifying and documenting good practice in this fashion will then provide a basis on which to advocate with local and national government. It will also provide additional knowledge regarding effective community

[i] For example: 'Natural Disaster Risk Reduction: The Policy and Practice of Selected Institutional Donors' report and conference (2003); and 'Mainstreaming Disaster Risk Reduction: A Tool for Development Organisations' (2005)

[ii] This was the subject of Tearfund's seminar at the UN World Conference on Disaster Reduction, Kobe, Japan, January 2005

level actions for the benefit of development organisations working with vulnerable groups.

As someone with specialist experience and knowledge of disaster risk reduction within one or more of these countries or at an international level, we would be extremely grateful if you could assist us in our research by helping to identify:

a) **The challenges associated with linking good practice community-based disaster risk management with government policy and practice**
b) **Examples of good practice community-based disaster risk reduction**

A short questionnaire, based on just two questions, is attached to help guide your response.

The initial findings of the research will be discussed at a workshop[iii] prior to the publication of a report. In return for your assistance we would acknowledge you in the report, provide you with a copy, and welcome your attendance at the workshop.

The deadline for submission of the completed questionnaire is **Friday 3 November 2006**. Please email your response to myself at the email address provided below.

Thank you for any assistance that you are able to provide.

With kind regards

Paul Venton

Independent Consultant
On behalf of Tearfund UK

Email: paul.venton@highestwater.com
Tel: +44 (0)1306 731 660

[iii] Earmarked for mid December 2006 in Tearfund's Headquarters (Teddington, UK)

AJ.2 Questionnaire for Disaster Risk Reduction Specialists

NAME:

JOB TITLE:

ORGANISATION:

PART 1

What are the challenges associated with linking good practice community-based disaster risk management with government policy and practice?

Can you site any examples of where NGOs have been successful in this, and how challenges were overcome to achieve it?

PART 2

Can you identify examples of good practice community-based disaster risk reduction?

To help guide your response you are encouraged to use the table below. This table lists five different categories based on the *sustainable livelihoods framework:* economic, natural, physical, individual, social. It also separates actions that can occur before, during and after a disaster[iv]. Example responses (expressed by vulnerable communities as part of the community research already undertaken) are included to highlight the type of information that will be useful. If your response only relates to a particular hazard type (flooding, earthquake, landslide etc) then please indicate this.

CATEGORIES	**PHASES OF DISASTER**		
	BEFORE	**DURING**	**AFTER**
ECONOMIC Income, Savings, Livelihoods etc	The introduction of new cropping types and patterns, to suit local hazard characteristics, leads to more predictable and secure harvests. (Malawi)	Income generating measures that safeguard against the sale of assets during hard times, when prices are low, help protect against an increase in poverty and vulnerability in the longer-term. (Malawi)	Ensure businesses and households have access to fair loans post disaster. (Sri Lanka & Bangladesh)

[iv] *Phases* of disaster will be most appropriate in relation to rapid onset hazards (such as earthquakes) and least helpful in relation to slow onset hazards (such as drought) and in areas of complex emergency. In the latter situation *during* disaster may best suit normal conditions throughout the year.

NATURAL Land, Forests, Water etc	Household rain water harvesting improves water supply during dry periods. (Bangladesh)	Wild food stuffs, if available, can be used to supplement food intake. (Malawi & Sri Lanka)	Reforestation would help to alleviate the conditions that lead to a poor harvest. (Malawi)
PHYSICAL Buildings, Tools, Communications etc	Radios can be an effective means of mass communication if the message is relayed in an appropriate and timely fashion. (Sri Lanka)	Raised hand pumps enable access to safe water throughout the duration of flooding, reducing levels of morbidity. (India)	Reconstruction activities should incorporate measures that reduce vulnerability to future disasters. (General)
INDIVIDUAL Skills, Knowledge, Health etc	Education and training on efficient crop production has been proven to have clear benefits when implemented. (Malawi)	Community members have ideas regarding solutions to problems; it is not necessary to impose externally driven remedies. (Sri Lanka)	The reinstatement of school education for children supports a community-wide sense of a return to normal. (Sri Lanka)
SOCIAL Networks, Relationships etc	Early warning is critical, but has to be from a trusted source so that people take advice seriously. (Bangladesh & Sri Lanka)	Awareness of the support provided by extended family members may inform equitable aid delivery. (Bangladesh & Sri Lanka)	Surviving a disaster and minimising losses leads to a strong sense of self-confidence that can be channelled into the attainment of other disaster-aware development aims. (India)

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS QUESTIONNAIRE

The deadline for submission of completed questionnaire is Friday 3 November 2006

Please email your response to: paul.venton@highestwater.com

APPENDIX AK

Good Practice Community Based Disaster Risk Management Workshop

AK.1 Workshop Agenda

8.45am	Registration and coffee
9.00	Introduction and Part A of the Report (Good Practice CBDRM)
9.20	Gallery Session
10.00	Separate Focus Group discussion • Comment on the methodology used to capture good practice • Comment on the use of frameworks to present the good practice • Identify any fundamental themes missing
10.45	Coffee break
11.00	Feedback session from Focus Groups
11.30	Part B of Report (Linking Good Practice CBDRM with Government Policy and Practice)
11.40	Focus Group discussion based on the four sections: • "They Can't Hear Anything" • "They Don't Want to Hear Anything" • "They Hear but Don't Want to Act" • "They Hear but Struggle to Act"
12.15	Feedback sessions from Focus Groups
12.45	Round up by Professor Ian Davis
1 – 2pm	Lunch in the Upper Room

AK.2 List of Participants

The workshop was held on 12 December 2006, Conference Room, Teddington Baptist Church, Church Road, Teddington, UK

Table AK – 1: Good Practice Community Based Disaster Risk Management Workshop List of Participants

Name	Organisation
Annelies Heijmans	Wageningen University, The Netherlands
Antony Spalton	IFRC, Geneva
Carlos Morales	Interchurch Organisation for Development Cooperation, The Netherlands
Ian Davis	Cranfield University
John Twigg	University College London
Philip Buckle	Coventry University
Robert Cruickshank	CAFOD
Sarah Stavrakakis	Homeless International
Tamsin Walters	CAFOD
Vicki Wooding	Habitat for Humanity
Alice Fay	Tearfund
Angela Mugore	
Bob Hansford	
Brian Woolnough	
Caroline Kassell	
Donald Mavunduse	
Eleanor Tuck	
Ian Derbyshire	
Jessica Faleiro	
Jo Khinmaung	
Liu Liu	
Nick Burn	

Name	Organisation
Oenone Chadburn	Tearfund
Paul Venton	
Sarah Dellor	
Sarah Dilloway	
Sarah Dodd	
Sarah La Trobe	
Shona Macpherson	

APPENDIX AL

Good Practice Community Based Disaster Risk Management Guidelines and Questionnaire for Government Interviews

Tearfund drafted these guidelines and questionnaire. They draw on the author's earlier work on this project.

AL.1 Guidelines

1. Turning Practice into Policy Project: Background Information

Tearfund believes that local-level disaster risk reduction (DRR) measures should be supported and scaled up by governments through a strong national policy framework. To achieve this 'scaling up' it is important to be able to demonstrate good practice DRR at local level, as well as identify, and seek to address, the constraints faced by national governments to investing in this.

Tearfund's research project 'Turning Practice into Policy' is in four phases. The first phase focuses on identifying community-based good practice, and is now complete. We are currently entering the second phase, which focuses on analysing governmental constraints hindering the adoption of good practice as defined in Phase 1. We are inviting Tearfund partner organisations to help us with this, through meeting with national government officials to enquire about their government's policy and practice on DRR. The results of these meetings will be documented in a report. Tearfund will then use the findings of Phase 1 and 2 to produce a synthesis report containing recommendations to advance national and international policy on DRR (Phase 3). All three reports will be included in a pack and disseminated to partner organisations, to assist them with taking forward advocacy initiatives on DRR (Phase 4).

We would really appreciate the assistance of partners in Phase 2. We believe the meetings partners have with their governments will help them develop a better understanding of their government's approach to DRR, and consequently to design advocacy initiatives and lobby for change more effectively. The meetings will also

develop and strengthen organisations' relations with their government for future advocacy work / collaboration in programming. Finally, Phase 2 will help Tearfund to effectively lobby institutional donors for more support for community-based DRR.

2. Guidelines for Government Meetings

Tearfund partner organisations in several countries will be meeting with their governments between April and June 2007. The primary purpose of these meetings is to determine the level of priority their government gives to community-based DRR measures, and the reasons behind this level of prioritisation (i.e. what constraints the government believes it faces). The meetings will be aided by the use of a pre-determined set of questions, provided by Tearfund. Similar questions have been used by Tearfund in recent years to 'interview' institutional donor organisations[i].

2.1 The Process – A step by step guide

The following steps are designed to guide you, as a Tearfund partner organisation, through the process of meeting with your government if you have not done this before. The meetings should not be seen as daunting, but rather an opportunity to simply talk with government officials about their approach to DRR. You have every right to request access to government representatives. Moreover, it is in their interests to talk to you: you are directly connected with poor communities, understand the issues they face, and have information and insights that the government requires in order to respond effectively to its people's needs. But they, like you, are busy people so don't be put off if it takes a while to establish contact.

Before the meeting/s

1. We recommend that you start by reading the draft Phase 1 report '*Perspectives from communities and experts on good practice in community-based disaster risk management*', as well as the short paper accompanying these guidelines containing a summary of challenges in linking community-based DRR with government policy and practice.

[i] Tearfund (2003)

2. Before contacting your government, ensure you have background knowledge of its approach to DRR, e.g. does it have a policy / strategy on DRR? Has it made any public statements or agreements recently? Has it launched any new action plans on DRR? Has it made any commitments to implement all or part of the Hyogo Framework for Action? How is the government structured? etc. Such background knowledge will help save time in the meeting/s. Some country background papers produced by Tearfund are available.

3. Determine which central (national) government departments you wish to set up meetings with. (Although the research focuses on national level government, local government perspectives would also be useful. Do tailor or modify the questions so that they are appropriate for the level of government you are interviewing. Please tell Tearfund how you have changed the questions in your report back to us). If possible, try to arrange meetings with the Disaster Management office or equivalent as well as with a cross-section of other relevant government departments and offices (such as environment, water, agriculture, etc). This will help ensure you gain a more balanced and accurate picture of the government's approach to DRR, and help you to determine more precisely how disaster risk reduction fits into the government's relief and development structures and processes.

4. When you call, write or email to request a meeting with officials from your selected department/s, clearly explain who you are, what your organization does, and your motives for the meeting: i.e. you would like to ask the officials some questions about their government's approach to disaster risk reduction as part of a wider research project. As an NGO working to assist disaster-affected communities, it is unlikely that they will refuse to meet you. Offer to send the list of questions in advance, so that they can prepare for the meeting.

5. Ideally, two people should attend each meeting so that one can take notes while the other focuses on the conversation.

During the meeting/s

6. Make sure that everyone in the room is introduced, and give a brief background to your organisation if this is a first meeting. Clarify why you are meeting.

7. Not everyone in the meeting may have the same understanding of the concept of 'disaster risk reduction' and 'community-based disaster risk reduction', so it may be worth clarifying these concepts before you begin.

8. Use the questions in the questionnaire to guide the meeting. If possible avoid a formal 'question and answer' style approach and instead try to develop a more informal conversation. (However, do avoid being sidetracked into irrelevant discussions!). The crucial questions are questions 2, 3 and 5.

9. The primary purpose of the meeting is to find out as much as possible about the government's approach, so allow the officials to do most of the talking. Be relaxed, polite and friendly. Maintain a positive atmosphere and listen actively. If you disagree with the government's approach / policy / attitude and wish to say so, do it respectfully (see Table AL – 1 below). Know when to stop – be aware of how far you can push a line of questioning. Respond honestly to any questions they may ask you in return, and offer any relevant resources your organization may have.

10. At the end of the meeting, explain that you will be writing a brief analysis of the government's approach to DRR and that you will be more than happy to let them read this before it is passed on to Tearfund and others.

After the meeting/s

11. Debrief amongst yourselves: were your questions answered adequately? Did you think the government was giving you an accurate picture of its work on DRR? Did you discover new and useful information?

12. Write up what you learnt from the meeting, focusing on the government's answers to the key questions 2, 3, and 5.

13. Send a brief letter / email thanking the officials for meeting you. Offer them the chance to read your report to check for errors / misrepresentations.

14. Kindly send a copy of your report to Sarah La Trobe at Tearfund. Thank you!

Table AL – 1: Lobbying Techniques

Lobbying Principles	Action
• **Respect**	Staff should show respect. They can criticize actions and policies but should not make personal attacks on individual policy makers.
• **Truthfulness**	Staff should accurately represent their own position and that of others, providing evidence for any claims they make.
• **Confidentiality**	Staff should not reveal confidential information offered by a policy-maker to a third party without their permission.

AL.2 Questionnaire

These questions are to be directed at national government officials (they will need to be adapted for local government).

Start by clarifying what is understood by 'disaster risk reduction' (see point 7 in the guidelines).

1. a/ How is disaster risk reduction incorporated into your government's development planning and programming? In other words, which department / ministry has responsibility for DRR and how are they coordinating with other relevant departments / ministries (e.g. those working on climate change, agriculture, water, etc)?

b/ How does disaster risk reduction fit into your government's disaster relief structures and processes?

2. What level of priority does disaster risk reduction (DRR), including community-based DRR, have within your government?
i.e.
* how many staff work on DRR within your government? (Does the government train its staff on DRR, and at what level - national, local?)
* what proportion of your government's total development budget is spent on DRR?
* how far is DRR integrated into your government's policies, strategies and programming?

3. Can you explain the reasons behind your government's current level of expenditure on disaster risk reduction? What would cause your government to allocate more resources to it?

4. What may hinder or prevent your government meeting its objectives as a signatory to the Hyogo Framework for Action?[ii] *(E.g. legislation?)*

5. Do you agree with the challenges, agreed by experts and practitioners around the world, of linking community-based DRR with government policy and practice? (See below). Are there any other challenges from your perspective?

6. What legislation does your government have in place to reduce disaster risk – e.g. codes for buildings, land-use, forestry, etc? How are these laws enforced?

[ii] The 'Hyogo Framework for Action' (HFA) was adopted by 168 governments at the 'World Conference on Disaster Reduction' in Japan, 2005. The HFA is a 10-year plan to make the world safer from natural hazards. Its goal is to substantially reduce disaster losses by 2015 - in lives, and in the social, economic, and environmental assets of communities and countries.

7. What role do you think donors and International Financial Institutions (e.g. World Bank) should play in supporting national governments on DRR? What role do you think INGOs / NGOs should play?

8. Do you have any other comments or observations? (e.g. trends, previous difficulties, future challenges, etc.)

AL.3 Challenges in Linking Good Practice Community Based Disaster Risk Management (CBDRM) with Government Policy and Practice[iii]

During the first phase of Tearfund's 'Turning Practice into Policy' project, Tearfund facilitators undertook fieldwork in focus groups with local communities in several countries. The purpose of this fieldwork was to identify examples of what local people considered to be good practice CBDRM. This work has been documented in the draft report '*Perspectives from communities and experts on good practice in community-based disaster risk management'*.

However, experts responding to Tearfund's research stressed that if community level disaster risk reduction (DRR) work is to reach its full potential, good practice CBDRM must be scaled-up: "*As with most community-based development strategies, scaling up is a critical challenge. NGO-initiated projects have been able to demonstrate effective strategies for disaster risk management in specific locations, but the scale of activities is often miniscule in relation to the need*" (Moench). For scale-up to occur, local, provincial and national level government needs to support good practice CBDRM through integrating DRR into its policy and practice.

Experts identified a number of challenges relating to linking CBDRM with government policy and practice. Many of these challenges were related to the ability of NGOs, communities and governments to *communicate* with each other. Issues raised fell into one of four categories:

[iii] Based on Good Practice Community Based Disaster Risk Management: Turning Practice into Policy (A Draft Tearfund Report) 12 December 2006

- The inability of governments, NGOs and communities to hear what each is saying.
- The reluctance of governments to hear what NGOs and communities are saying.
- Governments hear what NGOs and communities are saying, but have other priorities.
- Governments hear what NGOs and communities are saying, but struggle to act.

Examples of issues raised by experts under each of these categories are provided below:

1. The inability of governments, NGOs and communities to hear what each is saying

- Poor NGO appreciation of the context in which government works
- Lack of NGO influence at government level
- Policy makers lack knowledge of what good practice CBDRM is
- Lack of government decentralisation and community participation in decision-making
- Government perception of risk differs from the risk perceptions of local people

2. Governments are reluctant to hear what NGOs and communities are saying

- Lack of trust between NGOs and government
- Threat to power relations: the participatory aspects of CBDRM in local development can sometimes be considered a threat to local power(s)
- 'Quick-fix' versus addressing the causes of vulnerability: politicians may focus too much on disaster response or "impressive and quick-fix" structural mitigation measures.

3. Governments hear what NGOs and communities are saying but have other priorities

- Time frame: governments tend to respond to issues immediately at hand, failing to see the bigger picture

- Low priority: DRR competes for government attention with other development demands
- Response driven: government departments are not organised for DRR but respond to disasters in a reactive way

4. Governments hear what NGOs and communities are saying but struggle to act

- Governments view CBDRM as a separate activity, rather than integrated as part of 'normal' development
- Lack of government systems and structures to support CBDRM
- Low government capacity (training and expertise)
- Governments lack resources

Summary

From an NGO perspective, it is normal to blame government for the lack of scaling up of local actions. However, these findings show that some critical "inward facing" thinking on the part of the NGO is required ahead of the delivery of an advocacy message. The findings do not include governments' perspectives on the challenges in linking community based disaster risk management with government policy and practice. This is the purpose of Phase 2 of the project – to hear directly from governments about the obstacles and challenges they face.

APPENDIX AM

Semi-Structured Interviews

AM.1 Semi-Structured Interviews in India

Table AM – 1 provides details of semi-structured interviews undertaken in Bihar, India

Table AM – 1: Semi-Structured Interviews in Bihar

Date	Name	Position	Organisation
25 March 2004		Mukhiya	Panchayati Raj Institution (Ojhaul Panchayat, Dharbanga)
27 March 2004	Mr. Amar Nath Saha	Block Development Officer	Local Government (Dharbanga)
29 March 2004	Mr. M.W. Ashraf Mr. Shriman Nayaran Singh Mr. Vipim Kumar Singh	Local Landowners	(Dharbanga)
1 April 2004	Mr. Dillip Kumar Bhanja	State Project Officer	UNDP / Disaster Management Department, Government of Bihar (Patna)
27 February 2006	Mr. Naresh Jha	Block Development Officer	Local Government (Dharbanga)
27 February 2006	Mr. Mohammed Safdar Imam (alias Saheb)[i]	Panchayat Pradhan (Mukhiya)	Panchayati Raj Institution (Ojhaul Panchayat, Dharbanga)
1 March 2006	Mr. Alok Kumar Sinha	Secretary	Department of Disaster Management, Government of Bihar (Patna)

[i] Translation by Mr. Prashant Behary, Programme Manager and Mr. Usman, Discipleship Centre

Date	Name	Position	Organisation
1 March 2006	Dr. Satendra	Special Secretary	Department of Disaster Management, Government of Bihar (Patna)
	Dr. Rajan Sinha	Director and Associate Professor	Centre for Disaster Management, Administrative Training Institute (ATI) (Patna)
	Mr. Sanjay Pandey		Seconded from UNICEF to ATI (Patna)
2 March 2006	Mr. Kumar Deepak	Assistant State Project Officer	GoI - UNDP Disaster Risk Management Programme (Patna)

Table AM – 2 provides details of semi-structured interviews undertaken in Andhra Pradesh, India

Table AM – 2: Semi-Structured Interviews in Andhra Pradesh

Date	Name	Position	Organisation
12 April 2004	Mr. K. Siva Prasad	Head of Unit	AFPRO (Action for Food Protection) (Hyderabad)
16 April 2004		Project Facilitator	Outreach (NGO) (Khammam)
23 April 2004	Dr. K.J. Ramesh		Andhra Pradesh Disaster Mitigation Society (Hyderabad)
23 April 2004	Mr. Asutosh Mishra	State Relief Commissioner	Government of Andhra Pradesh (Hyderabad)
23 April 2004	Ms. Anita Rego	State Programme Manager	CARE – India (Hyderabad)
	Mr. Samuel Varaprasad Masam	Former Disaster Mitigation & Preparedness Manager	
25 April 2004	Dr. Sivarama Krishna		SAKTI (Oxfam partner local NGO) (Hyderabad)

Table AM – 3 provides details of semi-structured interviews undertaken in Delhi, India

Table AM – 3: Semi-Structured Interviews in Delhi

Date	Name	Position	Organisation
3 March 2006	Mr. G. Padmanabhan	Emergency Analyst	UNDP – India
3 March 2006	Mr. Rajeev Issar	Programme Associate	GoI - UNDP Disaster Risk Management Programme
3 March 2006	Mr. P. G. Dhar Chakrabati	Executive Director	National Institute of Disaster Management (NIDM)

Other Semi-Structured Interviews in India

Several meetings / semi-structured interviews were held in India during the period April 2004 – June 2006 that supplemented the semi-structured interviews as described above. The individuals whom the researcher met and discussed CRA, CBDRM and DRR in India in general are listed below. Those marked with * were met on more than one occasion.

Delhi

Aslam Perwaiz, UNDP*

G. Padmanabhan, UNDP*

P Chacko, Oxfam

Mohamed Babiker, IFRC

Anshu Sharma, SEEDS*

Manu Gupta, SEEDS

Gujarat

Mihir Bhatt, All India Disaster Mitigation Institute

Orissa

Rod MacLeod, CONCERN

Kalika Mohapatra, UNDP

Supriya Akerkar, Action Aid

AM.2 Semi-Structured Interviews in USA

Table AM – 4 provides details of semi-structured interviews undertaken in Massachusetts, USA

Table AM – 4: Semi-Structured Interviews in USA

Date	Name	Position	Organisation
10 August 2004	Dr. Peter Walker	Director	Feinstein International Famine Centre, Tufts University (Medford, Massachusetts)
12 August 2004	Mr. Peter Woodrow		Collaborative for Development Action (CDA) (Cambridge, Massachusetts)
25 August 2004	Mr. Mike Delaney	Director of Humanitarian Response	Oxfam – America (Boston, Massachusetts)
15 September 2004	Professor Susan Holcombe		Brandeis University (Boston, Massachusetts)
26 June 2006	Dr. Peter Walker	Director	Feinstein International Famine Centre, Tufts University (Medford, Massachusetts)
27 June 2006	Ms. Mary Anderson		Independent consultant (Cambridge, Massachusetts)

AM.3 Semi-Structured Interviews in The Philippines

Table AM – 5 provides details of semi-structured interviews undertaken in the Philippines

Table AM – 5: Semi-Structured Interviews in the Philippines

Date	Name	Position	Organisation
6 April 2005	Ms. Lorna Victoria		Centre for Disaster Preparedness (Manila)
6 April 2005	Ms. Rosalinda “Maan” Tablang	Executive Director	Citizens Disaster Response Network (Manila)

Date	Name	Position	Organisation
7 April 2005	Professor Emmanuel "Mel" Luna		University of the Philippines (Manila)
8 April 2005	Mr. Ronnie Ragasa Mr. Soc Evangelista		PHILRADS (Manila)
10 April 2005	Mr. Ka Noli	Leader	Buklod Tao (San Mateo, Rizal)
11 April 2005	Mr. Paul Pagaran	Officer in Charge	Philippines National Red Cross (Manila)
12 April 2005	Ms. Filipina Grace America	Mayor	Municipality of Infanta, Province of Quezon (Infanta)
13 April 2005	Ms. Priscilla Duque	Head of NDCC Assistant Civil Defence Executive Officer, Chief Training Officer and	National Disaster Coordinating Council (NDCC), Philippines Government (Manila)
13 April 2005	Mr. Nathaniel Cruz Ms. Susan Espinueva Mr. Vic Malano	Weather Services Chief Senior Weather Specialist (with focus on community based flood forecasting) Community based rainfall observation network	PAGASA (meteorological bureau / office) (Manila)
14 April 2005	Ms. Ma. Mylene M-Villegas Mr. Ishmael Narag	Chief Supervising Science Research Specialist	Geologic Disaster Awareness and Preparedness Division, PHIVOLCS (volcanology and seismology bureau / office) (Manila)
15 April 2005	Mr. Floyd Barnaby Fernandez	Head of Delegation	IFRC (Manila)

APPENDIX AN

Natural Disaster Risk Reduction - The Policy and Practice of Selected Institutional Donors

AN.1 List of Participating Organisations

1. Canadian government (CIDA)
2. European Union (ECHO, DIPECHO, DG RELEX, DG Environment)
3. Inter-American Development Bank (Sustainable Development Department)
4. Swedish government (Sida)
5. Swiss government (SDC)
6. UK government (DFID)
7. UN (UNDP and UNICEF)
8. US government (Office of Foreign Disaster Assistance)
9. World Bank (Disaster Management Facility[i])

AN.2 List of Interviewees

Table AN – 1: Natural Disaster Risk Reduction – The Policy and Practice of Selected Institutional Donors List of Interviewees

Name	Details	Date of meeting	Location
David Peppiatt	Secretariat Manager ProVention Consortium Secretariat	5/02/03	Geneva
Bruno Haghebaert	Officer ProVention Consortium Secretariat	05/02/03	Geneva
Yvonne Klynman	Senior Officer Disaster Policy International Federation of Red Cross and Red Crescent Societies (IFRC)	05/02/03	Geneva
Sálvano Briceño	Director United Nations International Strategy for Disaster Reduction (UN/ISDR)	05/02/03	Geneva
Francesco Pisano	Senior Officer United Nations International Strategy for Disaster Reduction (UN/ISDR)	05/02/03	Geneva

[i] DMF has now been replaced by a global partnership the Global Facility for Disaster Reduction and Recovery (GFDRR) which is housed at the World Bank

Name	Details	Date of meeting	Location
John Harding	Associate Officer, Scientific and Technical Coordination United Nations International Strategy for Disaster Reduction (UN/ISDR)	05/02/03	Geneva
Helena Molin-Valdes	Senior Policy Officer United Nations International Strategy for Disaster Reduction (UN/ISDR)	05/02/03	Geneva
Terry Jeggle	Independent Consultant, Hazard and Disaster Risk Management	06/02/03	
Yasemin Aysan	Acting Chief, Disaster Reduction & Recovery Programme Disaster Reduction Unit, (DRU), United Nations Development Programme (UNDP)	06/02/03	Geneva
Everett Ressler	Senior Programme Officer Office of Emergency Programmes, United Nations Children's Fund (UNICEF)	06/02/03	Geneva
Beat Von Däniken	Programme Officer Humanitarian Aid & SHA, Swiss Agency for Development & Cooperation (SDC)	07/02/03	Switzerland
Rudolf Fankhauser	Programme Officer Humanitarian Aid & SHA, Swiss Agency for Development & Cooperation (SDC)	07/02/03	Switzerland
Helena Ramón Jarraud	ECHO Desk Officer ECHO Disaster Preparedness (DIPECHO), European Union	10/02/03	Brussels
Debby Guha-Sapir	Director The Centre for Research on the Epidemiology of Disasters (CRED)	11/02/03	Brussels
Peter Billing	Head of Sector for Strategic Planning European Commission Humanitarian Office (ECHO), European Union	11/02/03	Brussels
Rensje Teerink	Administrator DG RELEX India, European Union	11/02/03	Brussels
Ernst Schulte	Principal Administrator DG Environment, European Union	11/02/03	Brussels

Name	Details	Date of meeting	Location
Johan Schaar	Head of Division Humanitarian Affairs and Conflict Division, Swedish International Development Agency (SIDA)	18/02/03	Telephone
Alcira Kreimer	Manager Disaster Management Facility (DMF), World Bank	25/02/03	Washington DC
Letitia Butler	Director Office of Policy Planning, United States Agency for International Development (USAID)	25/02/03	Washington DC
Jeff Borns	Director Disaster Response & Mitigation Division (DRM), Office of Foreign Disaster Assistance (OFDA), USAID	26/02/03	Washington DC
Katherine Marshall	Director and Counsellor to the President, Development Dialogue on Values & Ethics World Bank	26/02/03	Washington DC
Kari Keipi	Senior Natural Resource Specialist Environment Division, Sustainable Development Department, Inter American Development Bank (IDB)	26/02/03	Washington DC
Victoria Imperiale	Disaster Risk Management Specialist Environment Division, Sustainable Development Department, Inter American Development Bank (IDB)	26/02/03	Washington DC
Stephen Houston	Director Disaster Response World Relief	27/02/03	Washington DC
Brandon Pustejovsky	Desk Officer Disaster Response World Relief	27/02/03	Washington DC
Fenella Frost	Programme Officer – Disaster Reduction Conflict & Humanitarian Affairs Department (CHAD), Department for International Development (DFID)	04/03/03 & 18/06/03	London
Christine Hodge	Senior Programme Officer International Humanitarian Assistance (IHA), Canadian International Development Agency (CIDA)	10/03/03	Telephone

Name	Details	Date of meeting	Location
Catherine Gander	Consultant International Humanitarian Assistance (IHA), Canadian International Development Agency (CIDA)	10/03/03	Telephone
Peter Troy	Head of Humanitarian Programmes Team Conflict & Humanitarian Affairs Department (CHAD), Department for International Development (DFID)	18/06/03	London
Rob Holden	Head of Crisis Management Group Conflict & Humanitarian Affairs Department (CHAD), Department for International Development (DFID)	18/06/03	London
Mick Strikland	Programme Officer Latin America Department (DFID)	18/06/03	London
Nigel Kirby	Engineering Advisor Overseas Territories Department (DFID)	18/06/03	London
Alison Girdwood	Programme Manager Overseas Territories Department (DFID)	18/06/03	London
Sarah Dunn	Head of Performance Delivery Group Policy Division (DFID)	18/06/03	London
Jessica Troni & Thomas Tanner	'Climate Change Team' (DFID)	18/06/03	London
A conference (organised and hosted by Tearfund and Cranfield University) based upon this research was held on November 14th 2003 in Westminster, London. The conference attracted 46 attendees from donor institutions, NGOs, UN and academia (including many of the interviewees listed).			

APPENDIX AO

Supporting Natural Disaster Risk Reduction, Westminster Conference

AO.1 List of Participants from Institutional Donor Organisations

Table AO – 1: Westminster Conference List of Participants from Institutional Donor Organisations

Name (first)	Surname	Position	Organisation
Christina	Bollin	Programme Manager Sectorial Project Disaster Risk Management	German Agency for Technical Co-operation (GTZ)
Kari	Keipi	Senior Natural Resources Specialist	Inter-American Development Bank (IADB)
Johan	Schaar	Head of Humanitarian Affairs & Conflict Division	Swedish International Development Agency (SIDA)
Roger	Bellers	Disaster Management Advisor	Overseas Territories Dept. Department for International Development (DFID)
Olivia	Harland	Support Programme Officer – Disaster Reduction	Department for International Development (DFID)
Jessica	Troni	Environment Adviser	Policy Division Department for International Development (DFID)
Fenella	Frost	Disaster Reduction Adviser	Conflict & Humanitarian Affairs Dept. (CHAD) Department for International Development (DFID)
Hong-Won	Yu	Senior Programme Officer	Canadian International Development Agency (CIDA)
Andrew	Maskrey	Chief of Disaster Reduction Unit	United Nations Development Programme (UNDP)
Jonathan	Le Tocq	President	States of Guernsey Overseas Aid Committee
Michael	Marx	Disaster Response Team Leader	Office of US Foreign Disaster Assistance (OFDA), US Agency for International Development (USAID)

Name (first)	Surname	Position	Organisation
Lillian	Wikstrøm	Section for Humanitarian Affairs	Norwegian Ministry of Foreign Affairs
Ian	Barber	Deputy Head of Representation	EC Delegation

AO.2 List of Participants from NGOs

Table AO – 2: Westminster Conference List of Participants from NGOs

Name (first)	Surname	Position	Organisation
Yasmin	McDonnell	Emergencies Policy Analyst	Action Aid
Roger	Yates	Head of Emergencies	Action Aid
Eva	von Oelreich	Head of Disaster Preparedness & Policy Department	International Federation of Red Cross & Red Crescent Societies (IFRC)
Madeleen	Helmer	Head of Climate Centre	Netherlands Red Cross
Adam	Poulter	Disaster Preparedness Advisor	British Red Cross Society
Adrian	Denyer	Emergencies Advisor	CARE International UK
Sarah	Moss	Emergency Preparedness Manager	Christian Aid

AO.3 List of Other Participants

Table AO – 3: Westminster Conference List of Other Participants

Name (first)	Surname	Position	Organisation
Sálvano	Briceño	Director	UN International Strategy for Disaster Reduction (UN/ISDR)
Reid	Basher	Senior Advisor	UN International Strategy for Disaster Reduction (UN/ISDR)
Helena	Molin Valdes	Senior Officer	UN International Strategy for Disaster Reduction (UN/ISDR)
Bruno	Haghebaert	Officer	ProVention Consortium Secretariat
David	Peppiatt	Manager	ProVention Consortium Secretariat

Name (first)	Surname	Position	Organisation
Mary	Todd	Independent Consultant	
John	Twigg	Honorary Research Fellow	Benfield Hazard Research Centre University College London
Randolph	Kent	Senior Research Fellow	International Policy Institute Kings College
Charlotte	Benson	Independent Consultant	
Terry	Cannon	Honorary Research Fellow	School of Humanities & Natural Resources Institute University of Greenwich
Diana	White	Brussels Coordinator	EU-CORD Network
Thomas	Mitchell		Benfield Hazard Research Centre University College London
Mary Anne	Brocklesby	Lecturer in Development Studies	Centre for Development Studies University of Wales Swansea
Christine	Wamsler	Housing Development & Management (HDM)	Lund University Sweden
Margie	Smith	Independent Consultant	

AO.4 List of Conference Hosts

Table AO – 4: List of Westminster Conference Hosts

Name (first)	Surname	Position	Organisation
Ian	Davis	Professor	Cranfield Disaster Management Centre
Titus	Kuuyuor	Research student	Cranfield Disaster Management Centre
Malcolm	McNeil	International Director	Tearfund
Andy	Atkins	Advocacy Director	Tearfund
Nigel	Taylor	Public Policy Team Leader	Tearfund
Marcus	Oxley	Disaster Management Director	Tearfund
Sarah	La Trobe	Public Policy Officer - Environment and Disasters	Tearfund

Name (first)	Surname	Position	Organisation
Emily	Cross	Public Policy Assistant	Tearfund
Paul	Venton	Disaster Mitigation and Preparedness Officer	Tearfund
Bob	Hansford	Disaster Mitigation and Preparedness Advisor	Tearfund
Anna	Foxley	Institutional Donor Relations	Tearfund

APPENDIX AP

Review of Donor Progress Mainstreaming Disaster Risk Reduction

AP.1 List of Participating Organisations

The following organisations submitted a review of their progress mainstreaming DRR:

1. Canadian government (CIDA)
2. Danish government (Danida)
3. European Commission (ECHO, DG DEV, DG RELEX, DG AIDCO)
4. French government (Ministère des Affaires étrangères)
5. Inter-American Development Bank
6. Norwegian government (MFA)
7. Swedish government (Sida)
8. Swiss government (SDC)
9. UK government (DFID)
10. UNDP (BCPR)
11. World Bank (HRM)

GTZ also undertook a review, but this was not received in time to be included in the report Tearfund and UN/ISDR (2007).

APPENDIX AQ

Good Practice Community Based Disaster Risk Management Framework

Findings were analysed and captured in a framework. The framework firstly considered the temporal context. These were categorised into three phases[i]: *Normality/ Pre-Disaster Development, Emergency / Chronic Crisis*, and *Recovery*. These time-related categories provided a general sense of the context in which good practice CBDRM was identified through fieldwork or through questionnaire responses.

- *Normality / Pre-Disaster Development* refers to a period of time that local people would not consider to be unusual, and during which coping mechanisms are able to prevent a serious deterioration in the situation to a place where significant losses are suffered.
- *Emergency / Chronic Crisis* refers to a period of time when loss of life, livelihood and significant household assets occurs. External assistance is usually required in the form of humanitarian aid. An emergency is likely to be related to a rapid-onset hazard, such as an earthquake. A chronic crisis is likely to refer to a slower deterioration in people's well being on account of prolonged losses, accumulating to a point where people find it very hard to cope. Droughts are often associated with chronic crises, often exacerbated by conflict, insecurity and HIV and AIDS.
- *Recovery* refers to a period of time after an emergency / chronic crisis where people are beginning to restore their own ability to undertake livelihood activities and rebuild their communities.

[i] Often in reality people do not always distinguish between phases like this. In a pro-longed drought or in areas regularly affected by flooding for example, the 'disaster' situation becomes normality. Similarly due to high levels of prevalence, HIV and AIDS may be thought of as having impacts in terms of leading to an emergency / chronic crisis as well as being part of normality / pre-disaster development. Therefore these periods of time may well merge together, and in reality it may be hard or unnecessary to distinguish when chronic crisis becomes recovery and recovery becomes normality.

Once an example was assigned to the most relevant of these three periods of time, the framework then further categorised findings according to 'capital':

- *Financial:* Financial capital refers to savings and regular inflows of money. Savings can be held in the form of cash, bank deposits, liquid assets such as livestock and jewellery, and credit. Regular inflows of money refer to earned income, pensions, and remittances.
- *Natural:* There is a wide variation in the resources that make up natural capital, from intangible public goods such as the atmosphere and biodiversity to assets used directly for production (trees, land, etc.).
- *Physical:* Physical capital comprises basic infrastructure and producer goods. Infrastructure can refer to transport, shelter and buildings, water supply and sanitation, energy, and access to information (communications). Producer goods are the tools and equipment that people use (they may be owned on an individual or group basis or accessed through rental).
- *Human:* Human capital represents the skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives.
- *Social:* The social resources upon which people draw, are developed through: Networks and connectedness that increase people's trust and ability to work together and expand their access to wider institutions; Membership of more formalised groups which often entails adherence to mutually-agreed or commonly accepted rules; and relationships of trust, reciprocity and exchanges that facilitate co-operation, reduce costs and may provide the basis for informal safety nets amongst the poor.

APPENDIX AR

The Problem Tree

The Overseas Development Institute (ODI) provides a succinct explanation of the 'Problem Tree' on their website[i]. The following text is derived from this source.

"Problem tree analysis is central to many forms of project planning and is well developed among development agencies. Problem tree analysis helps to find solutions by mapping out the anatomy of cause and effect. This brings several advantages:

- The problem can be broken down into manageable and definable parts. This enables a clearer prioritisation of factors and helps focus objectives.
- There is more understanding of the problem and its often interconnected and even contradictory causes. This is often the first step in finding win-win solutions.
- It identifies the constituent issues and arguments, and can help establish who and what the political actors and processes are at each stage.
- It can help establish whether further information, evidence or resources are needed to make a strong case, or build a convincing solution.
- Present issues - rather than apparent, future or past issues - are dealt with and identified.
- The process of analysis often helps build a shared sense of understanding, purpose and action.

Problem Tree Analysis is best carried out in a small focus group of about six to eight people. It is important that factors can be added as the conversation progresses. The first step is to discuss and agree the problem or issue to be analysed. The problem or issue is written in the centre [as] the 'trunk' of the tree. This becomes the 'focal problem'.

Next, the group identify the causes of the focal problem - these become the roots - and then identify the consequences, which become the branches. These causes and

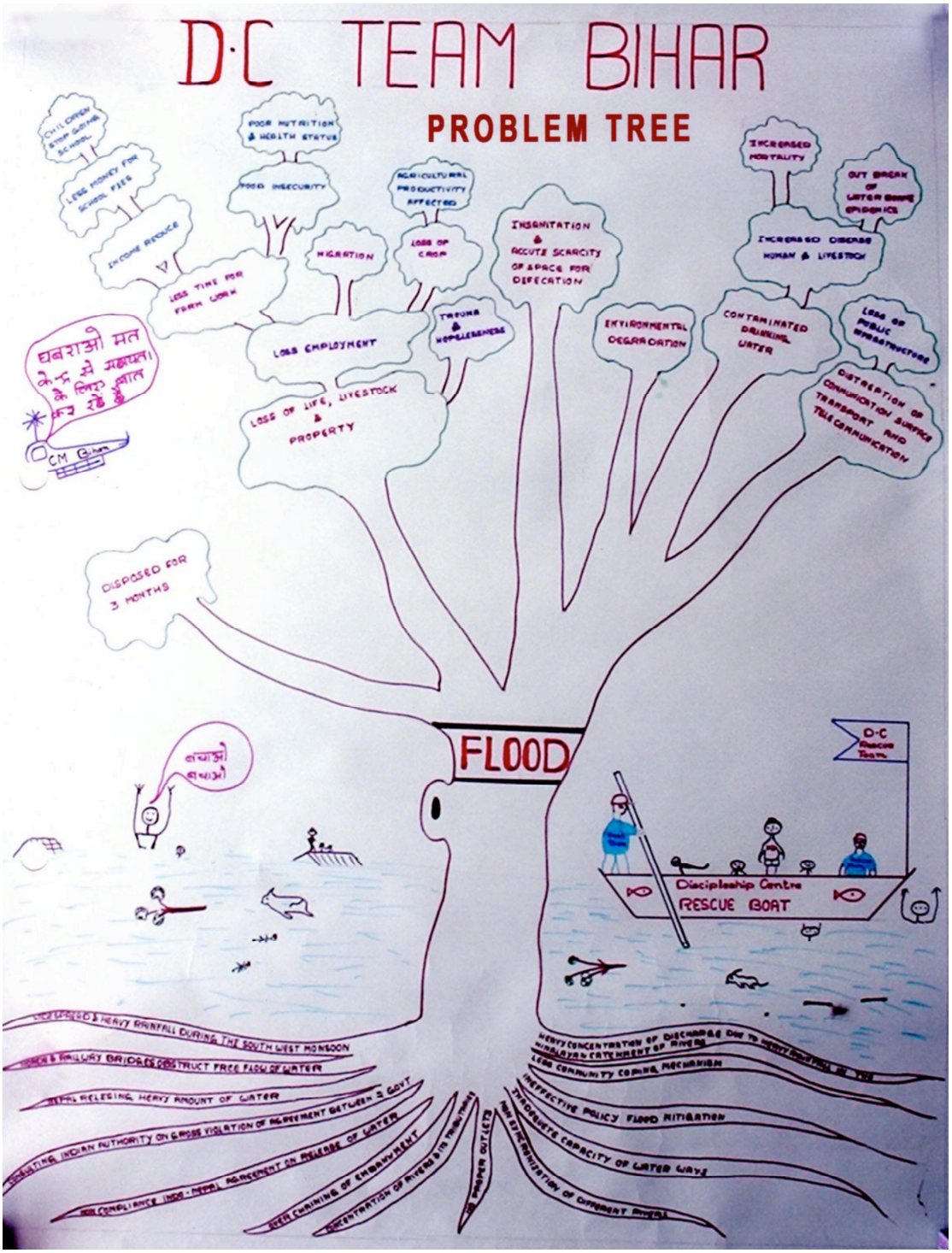
[i] http://www.odi.org.uk/RAPID/Tools/Toolkits/Communication/Problem_tree.html

consequences can be created on cards, perhaps individually or in pairs, so that they can be arranged in a cause-and-effect logic.

The heart of the exercise is the discussion, debate and dialogue that is generated as factors are arranged and re-arranged, often forming sub-dividing roots and branches. Time should be allowed to enable people to explain their feelings and reasoning, and record related ideas and points that come up under titles such as solutions, concerns and decisions."

A 'Problem Tree' was developed by the Discipleship Centre (DC) field team in Dharbanga District, Bihar (see Figure AR – 1) as a tool to analyse the cause and effect relationships associated with flooding in rural areas.

Figure AR – 1: Problem Tree Analysis for Flooding in Bihar

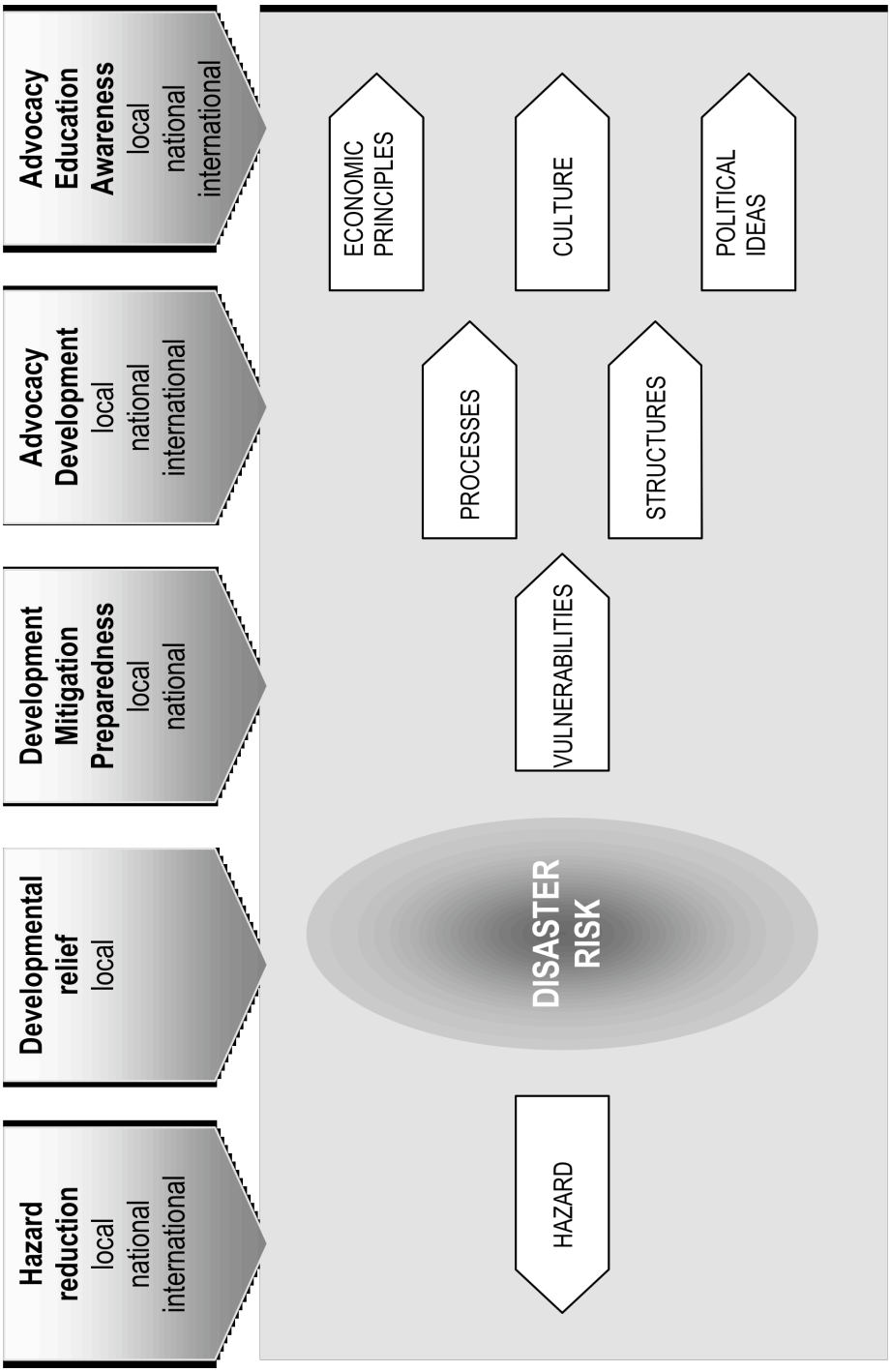


Source: Gabriel Das and other members of the Discipleship Centre (DC) field team in Dharbanga District, Bihar (2004)

APPENDIX AS

The Release Model

Figure AS – 1: Participatory Assessment of Disaster Risk's Use of the Release Model



Source: Adapted from Wisner et al. (2004)

The ‘Release Model’ (Wisner et al., 2004), as illustrated in Figure AS – 1, is a reversal of the ‘Crunch Model’ (see Figure 2.3). Whereas the ‘Crunch Model’ depicts how risk is generated, the ‘Release Model’ indicates how the ‘pressure’ that is hemming people into a context of vulnerability to hazards needs to be released, culminating in risk reduction.

Combined with its simplicity, the model is helpful from the perspective that it demonstrates that an intervention at one level will be limited in its effectiveness if it is not supported by interventions at the other levels. The various approaches that can be deployed in order to achieve risk reduction at the different levels are included in the Figure as ‘hazard reduction’, ‘developmental relief’, ‘development, mitigation, preparedness’, ‘advocacy, development’ and ‘advocacy, education, awareness’.

APPENDIX AT

Community Level Structural and Non-Structural Risk Reduction Measures

Box AT – 1: Community Level Structural and Non Structural Risk Reduction Measures

The use of a X indicates that a given measure is likely to be appropriate for a given hazard, and has been used to provide protection The use of * indicates that the highlighted measure is of primary importance to give protection from a specific hazard HAZARD TYPES		COMMUNITY RISK-REDUCTION MEASURES The lists of measures set out below are not comprehensive in scope, they are set out to provide an indication of typical measures All the measures listed below can be undertaken, (with relevant external support) by local communities																						
		Structural Measures											Non-Structural Measures											
		Safe New Building/Retrofit	Safe New Lifelines/Retrofit	Flood Protection Measures	Cyclone/Flood Shelters	Reforestation/Wind breaks	Warning Sirens	Food/Seed Buffer Stores	Water Harvesting	Soil Erosion Controls	Crop Diversification	Income Diversification	Safety Education in Schools	Public Awareness Programmes	Skill Training	Community Insurance	Building Codes/Bye-Laws	Land-Use Planning	Disaster Plans	Evacuation Plans	Local Warning Systems	Mass Telephone Warnings	Media Safety Campaigns	Preparedness Measures
Geo-Physical Hazards	Earthquake	*	*										*	*	*		*	X	*				X	*
	Volcanic Eruption						*						X	*	X		X	X	*	*	*	X	X	*
	Landslide					*				*			X	*	X		X	*	*	X	X	X	X	*
	Tsunami	X	X	X	X		*						*	*			X	X	*	*	*	*	X	*
Climatic / Hydrological Hazards	River Flooding: • Slow Onset	X	X	*	X	*				*		X	X	*	X	X	X	X	*	X	X	X	X	*
	• Flash Flood	X	X	*		*	*			*			X	*	X	X	X	X	*	*	*		X	*
	Cyclones/Typhoons	X	X	X	*	X	*			X			X	*	X	X	*	X	*	*	*	X	X	*
	Tornado	X	X				*						X	*	X		X		*		*	X	X	*
	Bush/Forest Fires						*						*	*					*	X	*	X	X	*
	Avalanche						*			X			X	*	X			X	*		*		*	*
	Drought					*		*	*	*	*	*	X	*	X	X			X	X	*		*	*

Source: Davis, I. (2008 pre-publication draft) Community Level Structural and Non Structural Risk Reduction Measures in World Bank (2008 pre-publication draft)

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[d] Written by author with Environmental Resources Management
[e] Containing a contribution by the author of this thesis